1

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SEQUENCE LISTING

<110> National Institute of Advanced Industrial Science and Technology,
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<120> Composition and method for elevating gene transfer efficiency

<130> AI010PCT

<150> JP 2004-22315
<151> 2004-01-29

<160> 14

<170> PatentIn version 3.1

<210> 1
<211> 1929
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(1929)
<223> fibronectin 1

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Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val Gln Cys
1   5   10   15

ctg ggg aca gcg gtg ccc tcc acg gga gcc tcg aag agc aag agg cag   96
Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys Arg Gln
            20   25   30

gct cag caa atg gtt cag ccc cag tcc ccg gtg gct gtc agt caa agc   144
Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser Gln Ser
        35   40   45

aag ccc ggt tgt tat gac aat gga aaa cac tat cag ata aat caa cag   192
Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln
    50   55   60

tgg gag cgg acc tac cta ggc aat gcg ttg gtt tgt act tgt tat gga   240
Trp Glu Arg Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys Tyr Gly
65   70   75   80

gga agc cga ggt ttt aac tgc gag agt aaa cct gaa gct gaa gag act   288
Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr
                85   90   95

tgc ttt gac aag tac act ggg aac act tac cga gtg ggt gac act tat   336
Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr
                100   105   110

gag cgt cct aaa gac tcc atg atc tgg gac tgt acc tgc atc ggg gct   384
Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala
            115   120   125

ggg cga ggg aga ata agc tgt acc atc gca aac cgc tgc cat gaa ggg   432
Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His Glu Gly
        130   135   140

ggt cag tcc tac aag att ggt gac acc tgg agg aga cca cat gag act   480
Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His Glu Thr
145   150   155   160

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ggt ggt tac atg tta gag tgt gtg tgt ctt ggt aat gga aaa gga gaa        528
Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys Gly Glu
            165                 170                 175

tgg acc tgc aag ccc ata gct gag aag tgt ttt gat cat gct gct ggg        576
Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala Ala Gly
            180                 185                 190

act tcc tat gtg gtc gga gaa acg tgg gag aag ccc tac caa ggc tgg        624
Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln Gly Trp
            195                 200                 205

atg atg gta gat tgt act tgc ctg gga gaa ggc agc gga cgc atc act        672
Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg Ile Thr
    210                 215                 220

tgc act tct aga aat aga tgc aac gat cag gac aca agg aca tcc tat        720
Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr
225                 230                 235                 240

aga att gga gac acc tgg agc aag aag gat aat cga gga aac ctg ctc        768
Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu
                245                 250                 255

cag tgc atc tgc aca ggc aac ggc cga gga gag tgg aag tgt gag agg        816
Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg
            260                 265                 270

cac acc tct gtg cag acc aca tcg agc gga tct ggc ccc ttc acc gat        864
His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp
            275                 280                 285

gtt cgt gca gct gtt tac caa ccg cag cct cac ccc cag cct cct ccc        912
Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro
    290                 295                 300

tat ggc cac tgt gtc aca gac agt ggt gtg gtc tac tct gtg ggg atg        960
Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met
305                 310                 315                 320

cag tgg ctg aag aca caa gga aat aag caa atg ctt tgc acg tgc ctg       1008
Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu
                325                 330                 335

ggc aac gga gtc agc tgc caa gag aca gct gta acc cag act tac ggt       1056
Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr Tyr Gly
            340                 345                 350

ggc aac tca aat gga gag cca tgt gtc tta cca ttc acc tac aat ggc       1104
Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Gly
            355                 360                 365

agg acg gac agc aca act tcg aat tat gag cag gac cag aaa tac tct       1152
Arg Thr Asp Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr Ser
    370                 375                 380

ttc tgc aca gac cac act gtt ttg gtt cag act cga gga gga aat tcc       1200
Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser
385                 390                 395                 400

aat ggt gcc ttg tgc cac ttc ccc ttc cta tac aac aac cac aat tac       1248
Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr
                405                 410                 415

act gat tgc act tct gag ggc aga aga gac aac atg aag tgg tgt ggg       1296
Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly
                420                 425                 430
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acc aca cag aac tat gat gcc gac cag aag ttt ggg ttc tgc ccc atg     1344
Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met
        435             440                 445

gct gcc cac gag gaa atc tgc aca acc aat gaa ggg gtc atg tac cgc     1392
Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr Arg
        450             455                 460

att gga gat cag tgg gat aag cag cat gac atg ggt cac atg atg agg     1440
Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met Arg
465             470                 475                 480

tgc acg tgt gtt ggg aat ggt cgt ggg gaa tgg aca tgc att gcc tac     1488
Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr
            485             490                 495

tcg cag ctt cga gat cag tgc att gtt gat gac atc act tac aat gtg     1536
Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn Val
        500             505                 510

aac gac aca ttc cac aag cgt cat gaa gag ggg cac atg ctg aac tgt     1584
Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn Cys
        515             520                 525

aca tgc ttc ggt cag ggt cgg ggc agg tgg aag tgt gat ccc gtc gac     1632
Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val Asp
        530             535                 540

caa tgc cag gat tca gag act ggg acg ttt tat caa att gga gat tca     1680
Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser
545             550                 555                 560

tgg gag aag tat gtg cat ggt gtc aga tac cag tgc tac tgc tat ggc     1728
Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly
            565             570                 575

cgt ggc att ggg gag tgg cat tgc caa cct tta cag acc tat cca agc     1776
Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser
            580             585                 590

tca agt ggt cct gtc gaa gta ttt atc act gag act ccg agt cag ccc     1824
Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro
            595             600                 605

aac tcc cac ccc atc cag tgg aat gca cca cag cca tct cac att tcc     1872
Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser
        610             615                 620

aag tac att ctc agg tgg aga cct gtg agt atc cca ccc aga aac ctt     1920
Lys Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn Leu
625             630                 635                 640

gga tac tga                                                         1929
Gly Tyr
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<210> 2
<211> 642
<212> PRT
<213> Homo sapiens

<400> 2

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Met Leu Arg Gly Pro Gly Pro Gly Leu Leu Leu Leu Ala Val Gln Cys
1               5                   10                  15
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Leu Gly Thr Ala Val Pro Ser Thr Gly Ala Ser Lys Ser Lys Arg Gln
     20   25   30

Ala Gln Gln Met Val Gln Pro Gln Ser Pro Val Ala Val Ser Gln Ser
     35   40   45

Lys Pro Gly Cys Tyr Asp Asn Gly Lys His Tyr Gln Ile Asn Gln Gln
     50   55   60

Trp Glu Arg Thr Tyr Leu Gly Asn Ala Leu Val Cys Thr Cys Tyr Gly
65   70   75   80

Gly Ser Arg Gly Phe Asn Cys Glu Ser Lys Pro Glu Ala Glu Glu Thr
           85   90   95

Cys Phe Asp Lys Tyr Thr Gly Asn Thr Tyr Arg Val Gly Asp Thr Tyr
          100   105   110

Glu Arg Pro Lys Asp Ser Met Ile Trp Asp Cys Thr Cys Ile Gly Ala
          115   120   125

Gly Arg Gly Arg Ile Ser Cys Thr Ile Ala Asn Arg Cys His Glu Gly
    130   135   140

Gly Gln Ser Tyr Lys Ile Gly Asp Thr Trp Arg Arg Pro His Glu Thr
145   150   155   160

Gly Gly Tyr Met Leu Glu Cys Val Cys Leu Gly Asn Gly Lys Gly Glu
          165   170   175

Trp Thr Cys Lys Pro Ile Ala Glu Lys Cys Phe Asp His Ala Ala Gly
          180   185   190

Thr Ser Tyr Val Val Gly Glu Thr Trp Glu Lys Pro Tyr Gln Gly Trp
          195   200   205

Met Met Val Asp Cys Thr Cys Leu Gly Glu Gly Ser Gly Arg Ile Thr
     210   215   220

Cys Thr Ser Arg Asn Arg Cys Asn Asp Gln Asp Thr Arg Thr Ser Tyr
225   230   235   240

Arg Ile Gly Asp Thr Trp Ser Lys Lys Asp Asn Arg Gly Asn Leu Leu
          245   250   255

Gln Cys Ile Cys Thr Gly Asn Gly Arg Gly Glu Trp Lys Cys Glu Arg
          260   265   270

His Thr Ser Val Gln Thr Thr Ser Ser Gly Ser Gly Pro Phe Thr Asp
          275   280   285

Val Arg Ala Ala Val Tyr Gln Pro Gln Pro His Pro Gln Pro Pro Pro
    290   295   300

Tyr Gly His Cys Val Thr Asp Ser Gly Val Val Tyr Ser Val Gly Met
305   310   315   320

Gln Trp Leu Lys Thr Gln Gly Asn Lys Gln Met Leu Cys Thr Cys Leu
            325   330   335

Gly Asn Gly Val Ser Cys Gln Glu Thr Ala Val Thr Gln Thr Tyr Gly
            340   345   350

Gly Asn Ser Asn Gly Glu Pro Cys Val Leu Pro Phe Thr Tyr Asn Gly
        355   360   365

Arg Thr Asp Ser Thr Thr Ser Asn Tyr Glu Gln Asp Gln Lys Tyr Ser
    370   375   380

Phe Cys Thr Asp His Thr Val Leu Val Gln Thr Arg Gly Gly Asn Ser
385   390   395   400

Asn Gly Ala Leu Cys His Phe Pro Phe Leu Tyr Asn Asn His Asn Tyr
            405   410   415

Thr Asp Cys Thr Ser Glu Gly Arg Arg Asp Asn Met Lys Trp Cys Gly
            420   425   430

Thr Thr Gln Asn Tyr Asp Ala Asp Gln Lys Phe Gly Phe Cys Pro Met
        435   440   445

Ala Ala His Glu Glu Ile Cys Thr Thr Asn Glu Gly Val Met Tyr Arg
    450   455   460

Ile Gly Asp Gln Trp Asp Lys Gln His Asp Met Gly His Met Met Arg
465   470   475   480

Cys Thr Cys Val Gly Asn Gly Arg Gly Glu Trp Thr Cys Ile Ala Tyr
            485   490   495

Ser Gln Leu Arg Asp Gln Cys Ile Val Asp Asp Ile Thr Tyr Asn Val
            500   505   510

Asn Asp Thr Phe His Lys Arg His Glu Glu Gly His Met Leu Asn Cys
        515   520   525

Thr Cys Phe Gly Gln Gly Arg Gly Arg Trp Lys Cys Asp Pro Val Asp
    530   535   540

Gln Cys Gln Asp Ser Glu Thr Gly Thr Phe Tyr Gln Ile Gly Asp Ser
545   550   555   560

Trp Glu Lys Tyr Val His Gly Val Arg Tyr Gln Cys Tyr Cys Tyr Gly
565   570   575

Arg Gly Ile Gly Glu Trp His Cys Gln Pro Leu Gln Thr Tyr Pro Ser
580   585   590

Ser Ser Gly Pro Val Glu Val Phe Ile Thr Glu Thr Pro Ser Gln Pro
595   600   605

Asn Ser His Pro Ile Gln Trp Asn Ala Pro Gln Pro Ser His Ile Ser
610   615   620

Lys Tyr Ile Leu Arg Trp Arg Pro Val Ser Ile Pro Pro Arg Asn Leu
625   630   635   640

Gly Tyr

<210> 3
<211> 798
<212> PRT
<213> Homo sapiens

<400> 3

Met Asn Leu Gln Pro Ile Phe Trp Ile Gly Leu Ile Ser Ser Val Cys
1   5   10   15

Cys Val Phe Ala Gln Thr Asp Glu Asn Arg Cys Leu Lys Ala Asn Ala
20   25   30

Lys Ser Cys Gly Glu Cys Ile Gln Ala Gly Pro Asn Cys Gly Trp Cys
35   40   45

Thr Asn Ser Thr Phe Leu Gln Glu Gly Met Pro Thr Ser Ala Arg Cys
50   55   60

Asp Asp Leu Glu Ala Leu Lys Lys Lys Gly Cys Pro Pro Asp Asp Ile
65   70   75   80

Glu Asn Pro Arg Gly Ser Lys Asp Ile Lys Lys Asn Lys Asn Val Thr
85   90   95

Asn Arg Ser Lys Gly Thr Ala Glu Lys Leu Lys Pro Glu Asp Ile Thr
100   105   110

Gln Ile Gln Pro Gln Gln Leu Val Leu Arg Leu Arg Ser Gly Glu Pro
115   120   125

Gln Thr Phe Thr Leu Lys Phe Lys Arg Ala Glu Asp Tyr Pro Ile Asp
130   135   140

Leu Tyr Tyr Leu Met Asp Leu Ser Tyr Ser Met Lys Asp Asp Leu Glu
145   150   155   160

Asn Val Lys Ser Leu Gly Thr Asp Leu Met Asn Glu Met Arg Arg Ile
                165   170   175

Thr Ser Asp Phe Arg Ile Gly Phe Gly Ser Phe Val Glu Lys Thr Val
                180   185   190

Met Pro Tyr Ile Ser Thr Thr Pro Ala Lys Leu Arg Asn Pro Cys Thr
        195   200   205

Ser Glu Gln Asn Cys Thr Ser Pro Phe Ser Tyr Lys Asn Val Leu Ser
        210   215   220

Leu Thr Asn Lys Gly Glu Val Phe Asn Glu Leu Val Gly Lys Gln Arg
225   230   235   240

Ile Ser Gly Asn Leu Asp Ser Pro Glu Gly Gly Phe Asp Ala Ile Met
                245   250   255

Gln Val Ala Val Cys Gly Ser Leu Ile Gly Trp Arg Asn Val Thr Arg
                260   265   270

Leu Leu Val Phe Ser Thr Asp Ala Gly Phe His Phe Ala Gly Asp Gly
        275   280   285

Lys Leu Gly Gly Ile Val Leu Pro Asn Asp Gly Gln Cys His Leu Glu
        290   295   300

Asn Asn Met Tyr Thr Met Ser His Tyr Tyr Asp Tyr Pro Ser Ile Ala
305   310   315   320

His Leu Val Gln Lys Leu Ser Glu Asn Asn Ile Gln Thr Ile Phe Ala
                325   330   335

Val Thr Glu Glu Phe Gln Pro Val Tyr Lys Glu Leu Lys Asn Leu Ile
            340   345   350

Pro Lys Ser Ala Val Gly Thr Leu Ser Ala Asn Ser Ser Asn Val Ile
        355   360   365

Gln Leu Ile Ile Asp Ala Tyr Asn Ser Leu Ser Ser Glu Val Ile Leu
        370   375   380

Glu Asn Gly Lys Leu Ser Glu Gly Val Thr Ile Ser Tyr Lys Ser Tyr
385   390   395   400

Cys Lys Asn Gly Val Asn Gly Thr Gly Glu Asn Gly Arg Lys Cys Ser
                405   410   415

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Asn Ile Ser Ile Gly Asp Glu Val Gln Phe Glu Ile Ser Ile Thr Ser
        420                 425                430

Asn Lys Cys Pro Lys Lys Asp Ser Asp Ser Phe Lys Ile Arg Pro Leu
        435             440                 445

Gly Phe Thr Glu Glu Val Glu Val Ile Leu Gln Tyr Ile Cys Glu Cys
    450             455             460

Glu Cys Gln Ser Glu Gly Ile Pro Glu Ser Pro Lys Cys His Glu Gly
465             470             475                 480

Asn Gly Thr Phe Glu Cys Gly Ala Cys Arg Cys Asn Glu Gly Arg Val
            485             490             495

Gly Arg His Cys Glu Cys Ser Thr Asp Glu Val Asn Ser Glu Asp Met
        500             505             510

Asp Ala Tyr Cys Arg Lys Glu Asn Ser Ser Glu Ile Cys Ser Asn Asn
        515             520             525

Gly Glu Cys Val Cys Gly Gln Cys Val Cys Arg Lys Arg Asp Asn Thr
    530             535             540

Asn Glu Ile Tyr Ser Gly Lys Phe Cys Glu Cys Asp Asn Phe Asn Cys
545             550             555                 560

Asp Arg Ser Asn Gly Leu Ile Cys Gly Gly Asn Gly Val Cys Lys Cys
            565             570             575

Arg Val Cys Glu Cys Asn Pro Asn Tyr Thr Gly Ser Ala Cys Asp Cys
        580             585             590

Ser Leu Asp Thr Ser Thr Cys Glu Ala Ser Asn Gly Gln Ile Cys Asn
    595             600             605

Gly Arg Gly Ile Cys Glu Cys Gly Val Cys Lys Cys Thr Asp Pro Lys
    610             615             620

Phe Gln Gly Gln Thr Cys Glu Met Cys Gln Thr Cys Leu Gly Val Cys
625             630             635             640

Ala Glu His Lys Glu Cys Val Gln Cys Arg Ala Phe Asn Lys Gly Glu
            645             650             655

Lys Lys Asp Thr Cys Thr Gln Glu Cys Ser Tyr Phe Asn Ile Thr Lys
            660             665             670

Val Glu Ser Arg Asp Lys Leu Pro Gln Pro Val Gln Pro Asp Pro Val
    675             680             685
```

Ser His Cys Lys Glu Lys Asp Val Asp Asp Cys Trp Phe Tyr Phe Thr
690   695   700

Tyr Ser Val Asn Gly Asn Asn Glu Val Met Val His Val Val Glu Asn
705   710   715   720

Pro Glu Cys Pro Thr Gly Pro Asp Ile Ile Pro Ile Val Ala Gly Val
                725   730   735

Val Ala Gly Ile Val Leu Ile Gly Leu Ala Leu Leu Leu Ile Trp Lys
          740   745   750

Leu Leu Met Ile Ile His Asp Arg Arg Glu Phe Ala Lys Phe Glu Lys
          755   760   765

Glu Lys Met Asn Ala Lys Trp Asp Thr Gly Glu Asn Pro Ile Tyr Lys
770   775   780

Ser Ala Val Thr Thr Val Val Asn Pro Lys Tyr Glu Gly Lys
785   790   795

<210> 4
<211> 1151
<212> PRT
<213> Homo sapiens

<400> 4

Phe Asn Val Asp Val Lys Asn Ser Met Thr Phe Ser Gly Pro Val Glu
1   5   10   15

Asp Met Phe Gly Tyr Thr Val Gln Gln Tyr Glu Asn Glu Glu Gly Lys
          20   25   30

Trp Val Leu Ile Gly Ser Pro Leu Val Gly Gln Pro Lys Asn Arg Thr
          35   40   45

Gly Asp Val Tyr Lys Cys Pro Val Gly Arg Gly Glu Ser Leu Pro Cys
          50   55   60

Val Lys Leu Asp Leu Pro Val Asn Thr Ser Ile Pro Asn Val Thr Glu
65   70   75   80

Val Lys Glu Asn Met Thr Phe Gly Ser Thr Leu Val Thr Asn Pro Asn
          85   90   95

Gly Gly Phe Leu Ala Cys Gly Pro Leu Tyr Ala Tyr Arg Cys Gly His
          100   105   110

Leu His Tyr Thr Thr Gly Ile Cys Ser Asp Val Ser Pro Thr Phe Gln
          115   120   125

Val Val Asn Ser Ile Ala Pro Val Gln Glu Cys Ser Thr Gln Leu Asp

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                130                     135                     140
        Ile Val Ile Val Leu Asp Gly Ser Asn Ser Ile Tyr Pro Trp Asp Ser
        145                 150                 155                 160

        Val Thr Ala Phe Leu Asn Asp Leu Leu Lys Arg Met Asp Ile Gly Pro
                        165                 170                 175

        Lys Gln Thr Gln Val Gly Ile Val Gln Tyr Gly Glu Asn Val Thr His
                        180                 185                 190

        Glu Phe Asn Leu Asn Lys Tyr Ser Ser Thr Glu Glu Val Leu Val Ala
                    195                 200                 205

        Ala Lys Lys Ile Val Gln Arg Gly Gly Arg Gln Thr Met Thr Ala Leu
            210                 215                 220

        Gly Thr Asp Thr Ala Arg Lys Glu Ala Phe Thr Glu Ala Arg Gly Ala
        225                 230                 235                 240

        Arg Arg Gly Val Lys Lys Val Met Val Ile Val Thr Asp Gly Glu Ser
                        245                 250                 255

        His Asp Asn His Arg Leu Lys Lys Val Ile Gln Asp Cys Glu Asp Glu
                    260                 265                 270

        Asn Ile Gln Arg Phe Ser Ile Ala Ile Leu Gly Ser Tyr Asn Arg Gly
                275                 280                 285

        Asn Leu Ser Thr Glu Lys Phe Val Glu Glu Ile Lys Ser Ile Ala Ser
            290                 295                 300

        Glu Pro Thr Glu Lys His Phe Phe Asn Val Ser Asp Glu Leu Ala Leu
        305                 310                 315                 320

        Val Thr Ile Val Lys Thr Leu Gly Glu Arg Ile Phe Ala Leu Glu Ala
                        325                 330                 335

        Thr Ala Asp Gln Ser Ala Ala Ser Phe Glu Met Glu Met Ser Gln Thr
                        340                 345                 350

        Gly Phe Ser Ala His Tyr Ser Gln Asp Trp Val Met Leu Gly Ala Val
                    355                 360                 365

        Gly Ala Tyr Asp Trp Asn Gly Thr Val Val Met Gln Lys Ala Ser Gln
            370                 375                 380

        Ile Ile Ile Pro Arg Asn Thr Thr Phe Asn Val Glu Ser Thr Lys Lys
        385                 390                 395                 400

        Asn Glu Pro Leu Ala Ser Tyr Leu Gly Tyr Thr Val Asn Ser Ala Thr
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                    405                     410                     415

    Ala Ser Ser Gly Asp Val Leu Tyr Ile Ala Gly Gln Pro Arg Tyr Asn
                420                     425                 430

    His Thr Gly Gln Val Ile Ile Tyr Arg Met Glu Asp Gly Asn Ile Lys
                435                     440                 445

    Ile Leu Gln Thr Leu Ser Gly Glu Gln Ile Gly Ser Tyr Phe Gly Ser
        450                     455                 460

    Ile Leu Thr Thr Thr Asp Ile Asp Lys Asp Ser Asn Thr Asp Ile Leu
    465                     470                     475                 480

    Leu Val Gly Ala Pro Met Tyr Met Gly Thr Glu Lys Glu Glu Gln Gly
                485                     490                     495

    Lys Val Tyr Val Tyr Ala Leu Asn Gln Thr Arg Phe Glu Tyr Gln Met
                500                     505                     510

    Ser Leu Glu Pro Ile Lys Gln Thr Cys Cys Ser Ser Arg Gln His Asn
                515                     520                     525

    Ser Cys Thr Thr Glu Asn Lys Asn Glu Pro Cys Gly Ala Arg Phe Gly
        530                     535                     540

    Thr Ala Ile Ala Ala Val Lys Asp Leu Asn Leu Asp Gly Phe Asn Asp
    545                     550                     555                 560

    Ile Val Ile Gly Ala Pro Leu Glu Asp Asp His Gly Gly Ala Val Tyr
                565                     570                     575

    Ile Tyr His Gly Ser Gly Lys Thr Ile Arg Lys Glu Tyr Ala Gln Arg
                580                     585                     590

    Ile Pro Ser Gly Gly Asp Gly Lys Thr Leu Lys Phe Phe Gly Gln Ser
            595                     600                     605

    Ile His Gly Glu Met Asp Leu Asn Gly Asp Gly Leu Thr Asp Val Thr
        610                     615                     620

    Ile Gly Gly Leu Gly Gly Ala Ala Leu Phe Trp Ser Arg Asp Val Ala
    625                     630                     635                 640

    Val Val Lys Val Thr Met Asn Phe Glu Pro Asn Lys Val Asn Ile Gln
                645                     650                     655

    Lys Lys Asn Cys His Met Glu Gly Lys Glu Thr Val Cys Ile Asn Ala
                660                     665                     670

    Thr Val Cys Phe Glu Val Lys Leu Lys Ser Lys Glu Asp Thr Ile Tyr
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675   680   685

Glu Ala Asp Leu Gln Tyr Arg Val Thr Leu Asp Ser Leu Arg Gln Ile
    690   695   700

Ser Arg Ser Phe Phe Ser Gly Thr Gln Glu Arg Lys Val Gln Arg Asn
705   710   715   720

Ile Thr Val Arg Lys Ser Glu Cys Thr Lys His Ser Phe Tyr Met Leu
            725   730   735

Asp Lys His Asp Phe Gln Asp Ser Val Arg Ile Thr Leu Asp Phe Asn
            740   745   750

Leu Thr Asp Pro Glu Asn Gly Pro Val Leu Asp Asp Ser Leu Pro Asn
            755   760   765

Ser Val His Glu Tyr Ile Pro Phe Ala Lys Asp Cys Gly Asn Lys Glu
    770   775   780

Lys Cys Ile Ser Asp Leu Ser Leu His Val Ala Thr Thr Glu Lys Asp
785   790   795   800

Leu Leu Ile Val Arg Ser Gln Asn Asp Lys Phe Asn Val Ser Leu Thr
            805   810   815

Val Lys Asn Thr Lys Asp Ser Ala Tyr Asn Thr Arg Thr Ile Val His
            820   825   830

Tyr Ser Pro Asn Leu Val Phe Ser Gly Ile Glu Ala Ile Gln Lys Asp
    835   840   845

Ser Cys Glu Ser Asn His Asn Ile Thr Cys Lys Val Gly Tyr Pro Phe
    850   855   860

Leu Arg Arg Gly Glu Met Val Thr Phe Lys Ile Leu Phe Gln Phe Asn
865   870   875   880

Thr Ser Tyr Leu Met Glu Asn Val Thr Ile Tyr Leu Ser Ala Thr Ser
            885   890   895

Asp Ser Glu Glu Pro Pro Glu Thr Leu Ser Asp Asn Val Val Asn Ile
            900   905   910

Ser Ile Pro Val Lys Tyr Glu Val Gly Leu Gln Phe Tyr Ser Ser Ala
    915   920   925

Ser Glu Tyr His Ile Ser Ile Ala Ala Asn Glu Thr Val Pro Glu Val
    930   935   940

Ile Asn Ser Thr Glu Asp Ile Gly Asn Glu Ile Asn Ile Phe Tyr Leu

```
        945              950              955              960

Ile Arg Lys Ser Gly Ser Phe Pro Met Pro Glu Leu Lys Leu Ser Ile
                 965              970              975

Ser Phe Pro Asn Met Thr Ser Asn Gly Tyr Pro Val Leu Tyr Pro Thr
             980              985              990

Gly Leu Ser Ser Ser Glu Asn Ala  Asn Cys Arg Pro His  Ile Phe Glu
         995              1000              1005

Asp Pro  Phe Ser Ile Asn Ser  Gly Lys Lys Met Thr  Thr Ser Thr
    1010              1015              1020

Asp His  Leu Lys Arg Gly Thr  Ile Leu Asp Cys Asn  Thr Cys Lys
    1025              1030              1035

Phe Ala  Thr Ile Thr Cys Asn  Leu Thr Ser Ser Asp  Ile Ser Gln
    1040              1045              1050

Val Asn  Val Ser Leu Ile Leu  Trp Lys Pro Thr Phe  Ile Lys Ser
    1055              1060              1065

Tyr Phe  Ser Ser Leu Asn Leu  Thr Ile Arg Gly Glu  Leu Arg Ser
    1070              1075              1080

Glu Asn  Ala Ser Leu Val Leu  Ser Ser Ser Asn Gln  Lys Arg Glu
    1085              1090              1095

Leu Ala  Ile Gln Ile Ser Lys  Asp Gly Leu Pro Gly  Arg Val Pro
    1100              1105              1110

Leu Trp  Val Ile Leu Leu Ser  Ala Phe Ala Gly Leu  Leu Leu Leu
    1115              1120              1125

Met Leu  Leu Ile Leu Ala Leu  Trp Lys Ile Gly Phe  Phe Lys Arg
    1130              1135              1140

Pro Leu  Lys Lys Lys Met Glu  Lys
    1145              1150
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<210> 5
<211> 1181
<212> PRT
<213> Homo sapiens

<400> 5

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Met Gly Pro Glu Arg Thr Gly Ala Ala Pro Leu Pro Leu Leu Leu Val
1               5              10              15

Leu Ala Leu Ser Gln Gly Ile Leu Asn Cys Cys Leu Ala Tyr Asn Val
             20              25              30
```

```
Gly Leu Pro Glu Ala Lys Ile Phe Ser Gly Pro Ser Ser Glu Gln Phe
      35              40                  45

Gly Tyr Ala Val Gln Gln Phe Ile Asn Pro Lys Gly Asn Trp Leu Leu
      50              55                  60

Val Gly Ser Pro Trp Ser Gly Phe Pro Glu Asn Arg Met Gly Asp Val
65                  70                  75                  80

Tyr Lys Cys Pro Val Asp Leu Ser Thr Ala Thr Cys Glu Lys Leu Asn
              85                  90                  95

Leu Gln Thr Ser Thr Ser Ile Pro Asn Val Thr Glu Met Lys Thr Asn
              100                 105                 110

Met Ser Leu Gly Leu Ile Leu Thr Arg Asn Met Gly Thr Gly Gly Phe
      115                 120                 125

Leu Thr Cys Gly Pro Leu Trp Ala Gln Gln Cys Gly Asn Gln Tyr Tyr
      130                 135                 140

Thr Thr Gly Val Cys Ser Asp Ile Ser Pro Asp Phe Gln Leu Ser Ala
145                 150                 155                 160

Ser Phe Ser Pro Ala Thr Gln Pro Cys Pro Ser Leu Ile Asp Val Val
              165                 170                 175

Val Val Cys Asp Glu Ser Asn Ser Ile Tyr Pro Trp Asp Ala Val Lys
              180                 185                 190

Asn Phe Leu Glu Lys Phe Val Gln Gly Leu Asp Ile Gly Pro Thr Lys
      195                 200                 205

Thr Gln Val Gly Leu Ile Gln Tyr Ala Asn Asn Pro Arg Val Val Phe
    210                 215                 220

Asn Leu Asn Thr Tyr Lys Thr Lys Glu Glu Met Ile Val Ala Thr Ser
225                 230                 235                 240

Gln Thr Ser Gln Tyr Gly Gly Asp Leu Thr Asn Thr Phe Gly Ala Ile
              245                 250                 255

Gln Tyr Ala Arg Lys Tyr Ala Tyr Ser Ala Ala Ser Gly Gly Arg Arg
              260                 265                 270

Ser Ala Thr Lys Val Met Val Val Val Thr Asp Gly Glu Ser His Asp
      275                 280                 285

Gly Ser Met Leu Lys Ala Val Ile Asp Gln Cys Asn His Asp Asn Ile
      290                 295                 300
```

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Leu Arg Phe Gly Ile Ala Val Leu Gly Tyr Leu Asn Arg Asn Ala Leu
305               310               315               320

Asp Thr Lys Asn Leu Ile Lys Glu Ile Lys Ala Ile Ala Ser Ile Pro
            325               330               335

Thr Glu Arg Tyr Phe Phe Asn Val Ser Asp Glu Ala Ala Leu Leu Glu
            340               345               350

Lys Ala Gly Thr Leu Gly Glu Gln Ile Phe Ser Ile Glu Gly Thr Val
            355               360               365

Gln Gly Gly Asp Asn Phe Gln Met Glu Met Ser Gln Val Gly Phe Ser
        370               375               380

Ala Asp Tyr Ser Ser Gln Asn Asp Ile Leu Met Leu Gly Ala Val Gly
385               390               395               400

Ala Phe Gly Trp Ser Gly Thr Ile Val Gln Lys Thr Ser His Gly His
                405               410               415

Leu Ile Phe Pro Lys Gln Ala Phe Asp Gln Ile Leu Gln Asp Arg Asn
            420               425               430

His Ser Ser Tyr Leu Gly Tyr Ser Val Ala Ala Ile Ser Thr Gly Glu
        435               440               445

Ser Thr His Phe Val Ala Gly Ala Pro Arg Ala Asn Tyr Thr Gly Gln
    450               455               460

Ile Val Leu Tyr Ser Val Asn Glu Asn Gly Asn Ile Thr Val Ile Gln
465               470               475               480

Ala His Arg Gly Asp Gln Ile Gly Ser Tyr Phe Gly Ser Val Leu Cys
            485               490               495

Ser Val Asp Val Asp Lys Asp Thr Ile Thr Asp Val Leu Leu Val Gly
        500               505               510

Ala Pro Met Tyr Met Ser Asp Leu Lys Lys Glu Glu Gly Arg Val Tyr
        515               520               525

Leu Phe Thr Ile Lys Glu Gly Ile Leu Gly Gln His Gln Phe Leu Glu
    530               535               540

Gly Pro Glu Gly Ile Glu Asn Thr Arg Phe Gly Ser Ala Ile Ala Ala
545               550               555               560

Leu Ser Asp Ile Asn Met Asp Gly Phe Asn Asp Val Ile Val Gly Ser
            565               570               575
```

Pro Leu Glu Asn Gln Asn Ser Gly Ala Val Tyr Ile Tyr Asn Gly His
        580   585   590

Gln Gly Thr Ile Arg Thr Lys Tyr Ser Gln Lys Ile Leu Gly Ser Asp
        595   600   605

Gly Ala Phe Arg Ser His Leu Gln Tyr Phe Gly Arg Ser Leu Asp Gly
    610   615   620

Tyr Gly Asp Leu Asn Gly Asp Ser Ile Thr Asp Val Ser Ile Gly Ala
625   630   635   640

Phe Gly Gln Val Val Gln Leu Trp Ser Gln Ser Ile Ala Asp Val Ala
            645   650   655

Ile Glu Ala Ser Phe Thr Pro Glu Lys Ile Thr Leu Val Asn Lys Asn
        660   665   670

Ala Gln Ile Ile Leu Lys Leu Cys Phe Ser Ala Lys Phe Arg Pro Thr
        675   680   685

Lys Gln Asn Asn Gln Val Ala Ile Val Tyr Asn Ile Thr Leu Asp Ala
    690   695   700

Asp Gly Phe Ser Ser Arg Val Thr Ser Arg Gly Leu Phe Lys Glu Asn
705   710   715   720

Asn Glu Arg Cys Leu Gln Lys Asn Met Val Val Asn Gln Ala Gln Ser
            725   730   735

Cys Pro Glu His Ile Ile Tyr Ile Gln Glu Pro Ser Asp Val Val Asn
            740   745   750

Ser Leu Asp Leu Arg Val Asp Ile Ser Leu Glu Asn Pro Gly Thr Ser
        755   760   765

Pro Ala Leu Glu Ala Tyr Ser Glu Thr Ala Lys Val Phe Ser Ile Pro
    770   775   780

Phe His Lys Asp Cys Gly Glu Asp Gly Leu Cys Ile Ser Asp Leu Val
785   790   795   800

Leu Asp Val Arg Gln Ile Pro Ala Ala Gln Glu Gln Pro Phe Ile Val
            805   810   815

Ser Asn Gln Asn Lys Arg Leu Thr Phe Ser Val Thr Leu Lys Asn Lys
            820   825   830

Arg Glu Ser Ala Tyr Asn Thr Gly Ile Val Val Asp Phe Ser Glu Asn
        835   840   845

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Leu Phe Phe Ala Ser Phe Ser Leu Pro Val Asp Gly Thr Glu Val Thr
    850                 855             860

Cys Gln Val Ala Ala Ser Gln Lys Ser Val Ala Cys Asp Val Gly Tyr
865             870             875                 880

Pro Ala Leu Lys Arg Glu Gln Gln Val Thr Phe Thr Ile Asn Phe Asp
            885                 890             895

Phe Asn Leu Gln Asn Leu Gln Asn Gln Ala Ser Leu Ser Phe Gln Ala
        900             905             910

Leu Ser Glu Ser Gln Glu Glu Asn Lys Ala Asp Asn Leu Val Asn Leu
    915             920             925

Lys Ile Pro Leu Leu Tyr Asp Ala Glu Ile His Leu Thr Arg Ser Thr
    930             935             940

Asn Ile Asn Phe Tyr Glu Ile Ser Ser Asp Gly Asn Val Pro Ser Ile
945             950             955             960

Val His Ser Phe Glu Asp Val Gly Pro Lys Phe Ile Phe Ser Leu Lys
            965             970             975

Val Thr Thr Gly Ser Val Pro Val Ser Met Ala Thr Val Ile Ile His
            980             985             990

Ile Pro Gln Tyr Thr Lys Glu Lys Asn Pro Leu Met Tyr Leu Thr Gly
        995             1000            1005

Val Gln Thr Asp Lys Ala Gly Asp Ile Ser Cys Asn Ala Asp Ile
    1010            1015            1020

Asn Pro Leu Lys Ile Gly Gln Thr Ser Ser Ser Val Ser Phe Lys
    1025            1030            1035

Ser Glu Asn Phe Arg His Thr Lys Glu Leu Asn Cys Arg Thr Ala
    1040            1045            1050

Ser Cys Ser Asn Val Thr Cys Trp Leu Lys Asp Val His Met Lys
    1055            1060            1065

Gly Glu Tyr Phe Val Asn Val Thr Thr Arg Ile Trp Asn Gly Thr
    1070            1075            1080

Phe Ala Ser Ser Thr Phe Gln Thr Val Gln Leu Thr Ala Ala Ala
    1085            1090            1095

Glu Ile Asn Thr Tyr Asn Pro Glu Ile Tyr Val Ile Glu Asp Asn
    1100            1105            1110
```

Thr Val Thr Ile Pro Leu Met Ile Met Lys Pro Asp Glu Lys Ala
    1115   1120   1125

Glu Val Pro Thr Gly Val Ile Ile Gly Ser Ile Ile Ala Gly Ile
    1130   1135   1140

Leu Leu Leu Leu Ala Leu Val Ala Ile Leu Trp Lys Leu Gly Phe
    1145   1150   1155

Phe Lys Arg Lys Tyr Glu Lys Met Thr Lys Asn Pro Asp Glu Ile
    1160   1165   1170

Asp Glu Thr Thr Glu Leu Ser Ser
    1175   1180

<210> 6
<211> 1051
<212> PRT
<213> Homo sapiens

<400> 6

Met Gly Pro Gly Pro Ser Arg Ala Pro Arg Ala Pro Arg Leu Met Leu
1   5   10   15

Cys Ala Leu Ala Leu Met Val Ala Ala Gly Gly Cys Val Val Ser Ala
            20   25   30

Phe Asn Leu Asp Thr Arg Phe Leu Val Val Lys Glu Ala Gly Asn Pro
        35   40   45

Gly Ser Leu Phe Gly Tyr Ser Val Ala Leu His Arg Gln Thr Glu Arg
    50   55   60

Gln Gln Arg Tyr Leu Leu Leu Ala Gly Ala Pro Arg Glu Leu Ala Val
65   70   75   80

Pro Asp Gly Tyr Thr Asn Arg Thr Gly Ala Val Tyr Leu Cys Pro Leu
            85   90   95

Thr Ala His Lys Asp Asp Cys Glu Arg Met Asn Ile Thr Val Lys Asn
            100   105   110

Asp Pro Gly His His Ile Ile Glu Asp Met Trp Leu Gly Val Thr Val
        115   120   125

Ala Ser Gln Gly Pro Ala Gly Arg Val Leu Val Cys Ala His Arg Tyr
    130   135   140

Thr Gln Val Leu Trp Ser Gly Ser Glu Asp Gln Arg Arg Met Val Gly
145   150   155   160

Lys Cys Tyr Val Arg Gly Asn Asp Leu Glu Leu Asp Ser Ser Asp Asp
            165   170   175

Trp Gln Thr Tyr His Asn Glu Met Cys Asn Ser Asn Thr Asp Tyr Leu
            180   185   190

Glu Thr Gly Met Cys Gln Leu Gly Thr Ser Gly Gly Phe Thr Gln Asn
            195   200   205

Thr Val Tyr Phe Gly Ala Pro Gly Ala Tyr Asn Trp Lys Gly Asn Ser
    210   215   220

Tyr Met Ile Gln Arg Lys Glu Trp Asp Leu Ser Glu Tyr Ser Tyr Lys
225   230   235   240

Asp Pro Glu Asp Gln Gly Asn Leu Tyr Ile Gly Tyr Thr Met Gln Val
            245   250   255

Gly Ser Phe Ile Leu His Pro Lys Asn Ile Thr Ile Val Thr Gly Ala
            260   265   270

Pro Arg His Arg His Met Gly Ala Val Phe Leu Leu Ser Gln Glu Ala
    275   280   285

Gly Gly Asp Leu Arg Arg Arg Gln Val Leu Glu Gly Ser Gln Val Gly
    290   295   300

Ala Tyr Phe Gly Ser Ala Ile Ala Leu Ala Asp Leu Asn Asn Asp Gly
305   310   315   320

Trp Gln Asp Leu Leu Val Gly Ala Pro Tyr Tyr Phe Glu Arg Lys Glu
            325   330   335

Glu Val Gly Gly Ala Ile Tyr Val Phe Met Asn Gln Ala Gly Thr Ser
            340   345   350

Phe Pro Ala His Pro Ser Leu Leu Leu His Gly Pro Ser Gly Ser Ala
            355   360   365

Phe Gly Leu Ser Val Ala Ser Ile Gly Asp Ile Asn Gln Asp Gly Phe
    370   375   380

Gln Asp Ile Ala Val Gly Ala Pro Phe Glu Gly Leu Gly Lys Val Tyr
385   390   395   400

Ile Tyr His Ser Ser Ser Lys Gly Leu Leu Arg Gln Pro Gln Gln Val
            405   410   415

Ile His Gly Glu Lys Leu Gly Leu Pro Gly Leu Ala Thr Phe Gly Tyr
            420   425   430

Ser Leu Ser Gly Gln Met Asp Val Asp Glu Asn Phe Tyr Pro Asp Leu
     435   440   445

Leu Val Gly Ser Leu Ser Asp His Ile Val Leu Leu Arg Ala Arg Pro
     450   455   460

Val Ile Asn Ile Val His Lys Thr Leu Val Pro Arg Pro Ala Val Leu
465   470   475   480

Asp Pro Ala Leu Cys Thr Ala Thr Ser Cys Val Gln Val Glu Leu Cys
          485   490   495

Phe Ala Tyr Asn Gln Ser Ala Gly Asn Pro Asn Tyr Arg Arg Asn Ile
         500   505   510

Thr Leu Ala Tyr Thr Leu Glu Ala Asp Arg Asp Arg Arg Pro Pro Arg
     515   520   525

Leu Arg Phe Ala Gly Ser Glu Ser Ala Val Phe His Gly Phe Phe Ser
     530   535   540

Met Pro Glu Met Arg Cys Gln Lys Leu Glu Leu Leu Leu Met Asp Asn
545   550   555   560

Leu Arg Asp Lys Leu Arg Pro Ile Ile Ile Ser Met Asn Tyr Ser Leu
          565   570   575

Pro Leu Arg Met Pro Asp Arg Pro Arg Leu Gly Leu Arg Ser Leu Asp
         580   585   590

Ala Tyr Pro Ile Leu Asn Gln Ala Gln Ala Leu Glu Asn His Thr Glu
     595   600   605

Val Gln Phe Gln Lys Glu Cys Gly Pro Asp Asn Lys Cys Glu Ser Asn
     610   615   620

Leu Gln Met Arg Ala Ala Phe Val Ser Glu Gln Gln Gln Lys Leu Ser
625   630   635   640

Arg Leu Gln Tyr Ser Arg Asp Val Arg Lys Leu Leu Leu Ser Ile Asn
         645   650   655

Val Thr Asn Thr Arg Thr Ser Glu Arg Ser Gly Glu Asp Ala His Glu
         660   665   670

Ala Leu Leu Thr Leu Val Val Pro Pro Ala Leu Leu Leu Ser Ser Val
     675   680   685

Arg Pro Pro Gly Ala Cys Gln Ala Asn Glu Thr Ile Phe Cys Glu Leu
     690   695   700

Gly Asn Pro Phe Lys Arg Asn Gln Arg Met Glu Leu Leu Ile Ala Phe
705   710   715   720

Glu Val Ile Gly Val Thr Leu His Thr Arg Asp Leu Gln Val Gln Leu
            725   730   735

Gln Leu Ser Thr Ser Ser His Gln Asp Asn Leu Trp Pro Met Ile Leu
        740   745   750

Thr Leu Leu Val Asp Tyr Thr Leu Gln Thr Ser Leu Ser Met Val Asn
        755   760   765

His Arg Leu Gln Ser Phe Phe Gly Gly Thr Val Met Gly Glu Ser Gly
    770   775   780

Met Lys Thr Val Glu Asp Val Gly Ser Pro Leu Lys Tyr Glu Phe Gln
785   790   795   800

Val Gly Pro Met Gly Glu Gly Leu Val Gly Leu Gly Thr Leu Val Leu
            805   810   815

Gly Leu Glu Trp Pro Tyr Glu Val Ser Asn Gly Lys Trp Leu Leu Tyr
            820   825   830

Pro Thr Glu Ile Thr Val His Gly Asn Gly Ser Trp Pro Cys Arg Pro
        835   840   845

Pro Gly Asp Leu Ile Asn Pro Leu Asn Leu Thr Leu Ser Asp Pro Gly
    850   855   860

Asp Arg Pro Ser Ser Pro Gln Arg Arg Arg Gln Leu Asp Pro Gly
865   870   875   880

Gly Gly Gln Gly Pro Pro Pro Val Thr Leu Ala Ala Ala Lys Lys Ala
            885   890   895

Lys Ser Glu Thr Val Leu Thr Cys Ala Thr Gly Arg Ala His Cys Val
        900   905   910

Trp Leu Glu Cys Pro Ile Pro Asp Ala Pro Val Val Thr Asn Val Thr
        915   920   925

Val Lys Ala Arg Val Trp Asn Ser Thr Phe Ile Glu Asp Tyr Arg Asp
    930   935   940

Phe Asp Arg Val Arg Val Asn Gly Trp Ala Thr Leu Phe Leu Arg Thr
945   950   955   960

Ser Ile Pro Thr Ile Asn Met Glu Asn Lys Thr Thr Trp Phe Ser Val
            965   970   975

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Asp Ile Asp Ser Glu Leu Val Glu Glu Leu Pro Ala Glu Ile Glu Leu
        980             985             990

Trp Leu Val Leu Val Ala Val Gly  Ala Gly Leu Leu Leu  Leu Gly Leu
        995             1000            1005

Ile Ile  Leu Leu Leu Trp Lys  Cys Gly Phe Phe Lys  Arg Ala Arg
    1010            1015            1020

Thr Arg  Ala Leu Tyr Glu Ala  Lys Arg Gln Lys Ala  Glu Met Lys
    1025            1030            1035

Ser Gln  Pro Ser Glu Thr Glu  Arg Leu Thr Asp Asp  Tyr
    1040            1045            1050
```

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<210>  7
<211>  1038
<212>  PRT
<213>  Homo sapiens

<400>  7
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Met Phe Pro Thr Glu Ser Ala Trp Leu Gly Lys Arg Gly Ala Asn Pro
1               5               10              15

Gly Pro Glu Ala Ala Val Arg Glu Thr Val Met Leu Leu Leu Cys Leu
        20              25              30

Gly Val Pro Thr Gly Arg Pro Tyr Asn Val Asp Thr Glu Ser Ala Leu
        35              40              45

Leu Tyr Gln Gly Pro His Asn Thr Leu Phe Gly Tyr Ser Val Val Leu
    50              55              60

His Ser His Gly Ala Asn Arg Trp Leu Leu Val Gly Ala Pro Thr Ala
65              70              75              80

Asn Trp Leu Ala Asn Ala Ser Val Ile Asn Pro Gly Ala Ile Tyr Arg
            85              90              95

Cys Arg Ile Gly Lys Asn Pro Gly Gln Thr Cys Glu Gln Leu Gln Leu
            100             105             110

Gly Ser Pro Asn Gly Glu Pro Cys Gly Lys Thr Cys Leu Glu Glu Arg
        115             120             125

Asp Asn Gln Trp Leu Gly Val Thr Leu Ser Arg Gln Pro Gly Glu Asn
    130             135             140

Gly Ser Ile Val Thr Cys Gly His Arg Trp Lys Asn Ile Phe Tyr Ile
145             150             155             160
```

Lys Asn Glu Asn Lys Leu Pro Thr Gly Gly Cys Tyr Gly Val Pro Pro
                165   170   175

Asp Leu Arg Thr Glu Leu Ser Lys Arg Ile Ala Pro Cys Tyr Gln Asp
            180   185   190

Tyr Val Lys Lys Phe Gly Glu Asn Phe Ala Ser Cys Gln Ala Gly Ile
        195   200   205

Ser Ser Phe Tyr Thr Lys Asp Leu Ile Val Met Gly Ala Pro Gly Ser
    210   215   220

Ser Tyr Trp Thr Gly Ser Leu Phe Val Tyr Asn Ile Thr Thr Asn Lys
225   230   235   240

Tyr Lys Ala Phe Leu Asp Lys Gln Asn Gln Val Lys Phe Gly Ser Tyr
                245   250   255

Leu Gly Tyr Ser Val Gly Ala Gly His Phe Arg Ser Gln His Thr Thr
            260   265   270

Glu Val Val Gly Gly Ala Pro Gln His Glu Gln Ile Gly Lys Ala Tyr
        275   280   285

Ile Phe Ser Ile Asp Glu Lys Glu Leu Asn Ile Leu His Glu Met Lys
    290   295   300

Gly Lys Lys Leu Gly Ser Tyr Phe Gly Ala Ser Val Cys Ala Val Asp
305   310   315   320

Leu Asn Ala Asp Gly Phe Ser Asp Leu Leu Val Gly Ala Pro Met Gln
            325   330   335

Ser Thr Ile Arg Glu Glu Gly Arg Val Phe Val Tyr Ile Asn Ser Gly
            340   345   350

Ser Gly Ala Val Met Asn Ala Met Glu Thr Asn Leu Val Gly Ser Asp
        355   360   365

Lys Tyr Ala Ala Arg Phe Gly Glu Ser Ile Val Asn Leu Gly Asp Ile
    370   375   380

Asp Asn Asp Gly Phe Glu Asp Val Ala Ile Gly Ala Pro Gln Glu Asp
385   390   395   400

Asp Leu Gln Gly Ala Ile Tyr Ile Tyr Asn Gly Arg Ala Asp Gly Ile
            405   410   415

Ser Ser Thr Phe Ser Gln Arg Ile Glu Gly Leu Gln Ile Ser Lys Ser
            420   425   430

Leu Ser Met Phe Gly Gln Ser Ile Ser Gly Gln Ile Asp Ala Asp Asn
    435   440   445

Asn Gly Tyr Val Asp Val Ala Val Gly Ala Phe Arg Ser Asp Ser Ala
    450   455   460

Val Leu Leu Arg Thr Arg Pro Val Val Ile Val Asp Ala Ser Leu Ser
465   470   475   480

His Pro Glu Ser Val Asn Arg Thr Lys Phe Asp Cys Val Glu Asn Gly
          485   490   495

Trp Pro Ser Val Cys Ile Asp Leu Thr Leu Cys Phe Ser Tyr Lys Gly
        500   505   510

Lys Glu Val Pro Gly Tyr Ile Val Leu Phe Tyr Asn Met Ser Leu Asp
        515   520   525

Val Asn Arg Lys Ala Glu Ser Pro Pro Arg Phe Tyr Phe Ser Ser Asn
    530   535   540

Gly Thr Ser Asp Val Ile Thr Gly Ser Ile Gln Val Ser Ser Arg Glu
545   550   555   560

Ala Asn Cys Arg Thr His Gln Ala Phe Met Arg Lys Asp Val Arg Asp
        565   570   575

Ile Leu Thr Pro Ile Gln Ile Glu Ala Ala Tyr His Leu Gly Pro His
        580   585   590

Val Ile Ser Lys Arg Ser Thr Glu Glu Phe Pro Pro Leu Gln Pro Ile
        595   600   605

Leu Gln Gln Lys Lys Glu Lys Asp Ile Met Lys Lys Thr Ile Asn Phe
    610   615   620

Ala Arg Phe Cys Ala His Glu Asn Cys Ser Ala Asp Leu Gln Val Ser
625   630   635   640

Ala Lys Ile Gly Phe Leu Lys Pro His Glu Asn Lys Thr Tyr Leu Ala
        645   650   655

Val Gly Ser Met Lys Thr Leu Met Leu Asn Val Ser Leu Phe Asn Ala
        660   665   670

Gly Asp Asp Ala Tyr Glu Thr Thr Leu His Val Lys Leu Pro Val Gly
        675   680   685

Leu Tyr Phe Ile Lys Ile Leu Glu Leu Glu Glu Lys Gln Ile Asn Cys
    690   695   700

Glu Val Thr Asp Asn Ser Gly Val Val Gln Leu Asp Cys Ser Ile Gly
705   710   715   720

Tyr Ile Tyr Val Asp His Leu Ser Arg Ile Asp Ile Ser Phe Leu Leu
              725   730   735

Asp Val Ser Ser Leu Ser Arg Ala Glu Glu Asp Leu Ser Ile Thr Val
              740   745   750

His Ala Thr Cys Glu Asn Glu Glu Glu Met Asp Asn Leu Lys His Ser
              755   760   765

Arg Val Thr Val Ala Ile Pro Leu Lys Tyr Glu Val Lys Leu Thr Val
    770   775   780

His Gly Phe Val Asn Pro Thr Ser Phe Val Tyr Gly Ser Asn Asp Glu
785   790   795   800

Asn Glu Pro Glu Thr Cys Met Val Glu Lys Met Asn Leu Thr Phe His
              805   810   815

Val Ile Asn Thr Gly Asn Ser Met Ala Pro Asn Val Ser Val Glu Ile
              820   825   830

Met Val Pro Asn Ser Phe Ser Pro Gln Thr Asp Lys Leu Phe Asn Ile
              835   840   845

Leu Asp Val Gln Thr Thr Thr Gly Glu Cys His Phe Glu Asn Tyr Gln
    850   855   860

Arg Val Cys Ala Leu Glu Gln Gln Lys Ser Ala Met Gln Thr Leu Lys
865   870   875   880

Gly Ile Val Arg Phe Leu Ser Lys Thr Asp Lys Arg Leu Leu Tyr Cys
              885   890   895

Ile Lys Ala Asp Pro His Cys Leu Asn Phe Leu Cys Asn Phe Gly Lys
              900   905   910

Met Glu Ser Gly Lys Glu Ala Ser Val His Ile Gln Leu Glu Gly Arg
              915   920   925

Pro Ser Ile Leu Glu Met Asp Glu Thr Ser Ala Leu Lys Phe Glu Ile
    930   935   940

Arg Ala Thr Gly Phe Pro Glu Pro Asn Pro Arg Val Ile Glu Leu Asn
945   950   955   960

Lys Asp Glu Asn Val Ala His Val Leu Leu Glu Gly Leu His His Gln
              965   970   975

Arg Pro Lys Arg Tyr Phe Thr Ile Val Ile Ile Ser Ser Ser Leu Leu
        980   985   990

Leu Gly Leu Ile Val Leu Leu Leu Ile Ser Tyr Val Met Trp Lys Ala
        995   1000   1005

Gly Phe Phe Lys Arg Gln Tyr Lys Ser Ile Leu Gln Glu Glu Asn
    1010   1015   1020

Arg Arg Asp Ser Trp Ser Tyr Ile Asn Ser Lys Ser Asn Asp Asp
    1025   1030   1035

<210> 8
<211> 1049
<212> PRT
<213> Homo sapiens

<400> 8

Met Gly Ser Arg Thr Pro Glu Ser Pro Leu His Ala Val Gln Leu Arg
1   5   10   15

Trp Gly Pro Arg Arg Arg Pro Pro Leu Leu Pro Leu Leu Leu Leu Leu
        20   25   30

Leu Pro Pro Pro Pro Arg Val Gly Gly Phe Asn Leu Asp Ala Glu Ala
        35   40   45

Pro Ala Val Leu Ser Gly Pro Pro Gly Ser Phe Phe Gly Phe Ser Val
    50   55   60

Glu Phe Tyr Arg Pro Gly Thr Asp Gly Val Ser Val Leu Val Gly Ala
65   70   75   80

Pro Lys Ala Asn Thr Ser Gln Pro Gly Val Leu Gln Gly Gly Ala Val
            85   90   95

Tyr Leu Cys Pro Trp Gly Ala Ser Pro Thr Gln Cys Thr Pro Ile Glu
        100   105   110

Phe Asp Ser Lys Gly Ser Arg Leu Leu Glu Ser Ser Leu Ser Ser Ser
        115   120   125

Glu Gly Glu Glu Pro Val Glu Tyr Lys Ser Leu Gln Trp Phe Gly Ala
    130   135   140

Thr Val Arg Ala His Gly Ser Ser Ile Leu Ala Cys Ala Pro Leu Tyr
145   150   155   160

Ser Trp Arg Thr Glu Lys Glu Pro Leu Ser Asp Pro Val Gly Thr Cys
            165   170   175

Tyr Leu Ser Thr Asp Asn Phe Thr Arg Ile Leu Glu Tyr Ala Pro Cys

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                180                      185                      190

Arg Ser Asp Phe Ser Trp Ala Ala Gly Gln Gly Tyr Cys Gln Gly Gly
        195                 200                 205

Phe Ser Ala Glu Phe Thr Lys Thr Gly Arg Val Val Leu Gly Gly Pro
    210                 215                 220

Gly Ser Tyr Phe Trp Gln Gly Gln Ile Leu Ser Ala Thr Gln Glu Gln
225                 230                 235                 240

Ile Ala Glu Ser Tyr Tyr Pro Glu Tyr Leu Ile Asn Leu Val Gln Gly
            245                 250                 255

Gln Leu Gln Thr Arg Gln Ala Ser Ser Ile Tyr Asp Asp Ser Tyr Leu
            260                 265                 270

Gly Tyr Ser Val Ala Val Gly Glu Phe Ser Gly Asp Asp Thr Glu Asp
        275                 280                 285

Phe Val Ala Gly Val Pro Lys Gly Asn Leu Thr Tyr Gly Tyr Val Thr
    290                 295                 300

Ile Leu Asn Gly Ser Asp Ile Arg Ser Leu Tyr Asn Phe Ser Gly Glu
305                 310                 315                 320

Gln Met Ala Ser Tyr Phe Gly Tyr Ala Val Ala Ala Thr Asp Val Asn
            325                 330                 335

Gly Asp Gly Leu Asp Asp Leu Leu Val Gly Ala Pro Leu Leu Met Asp
            340                 345                 350

Arg Thr Pro Asp Gly Arg Pro Gln Glu Val Gly Arg Val Tyr Val Tyr
        355                 360                 365

Leu Gln His Pro Ala Gly Ile Glu Pro Thr Pro Thr Leu Thr Leu Thr
    370                 375                 380

Gly His Asp Glu Phe Gly Arg Phe Gly Ser Ser Leu Thr Pro Leu Gly
385                 390                 395                 400

Asp Leu Asp Gln Asp Gly Tyr Asn Asp Val Ala Ile Gly Ala Pro Phe
            405                 410                 415

Gly Gly Glu Thr Gln Gln Gly Val Val Phe Val Phe Pro Gly Gly Pro
            420                 425                 430

Gly Gly Leu Gly Ser Lys Pro Ser Gln Val Leu Gln Pro Leu Trp Ala
        435                 440                 445

Ala Ser His Thr Pro Asp Phe Phe Gly Ser Ala Leu Arg Gly Gly Arg
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          450                     455                     460

Asp Leu Asp Gly Asn Gly Tyr Pro Asp Leu Ile Val Gly Ser Phe Gly
465               470               475               480

Val Asp Lys Ala Val Val Tyr Arg Gly Arg Pro Ile Val Ser Ala Ser
                  485               490               495

Ala Ser Leu Thr Ile Phe Pro Ala Met Phe Asn Pro Glu Glu Arg Ser
                500               505               510

Cys Ser Leu Glu Gly Asn Pro Val Ala Cys Ile Asn Leu Ser Phe Cys
            515               520               525

Leu Asn Ala Ser Gly Lys His Val Ala Asp Ser Ile Gly Phe Thr Val
        530               535               540

Glu Leu Gln Leu Asp Trp Gln Lys Gln Lys Gly Gly Val Arg Arg Ala
545               550               555               560

Leu Phe Leu Ala Ser Arg Gln Ala Thr Leu Thr Gln Thr Leu Leu Ile
                565               570               575

Gln Asn Gly Ala Arg Glu Asp Cys Arg Glu Met Lys Ile Tyr Leu Arg
            580               585               590

Asn Glu Ser Glu Phe Arg Asp Lys Leu Ser Pro Ile His Ile Ala Leu
        595               600               605

Asn Phe Ser Leu Asp Pro Gln Ala Pro Val Asp Ser His Gly Leu Arg
    610               615               620

Pro Ala Leu His Tyr Gln Ser Lys Ser Arg Ile Glu Asp Lys Ala Gln
625               630               635               640

Ile Leu Leu Asp Cys Gly Glu Asp Asn Ile Cys Val Pro Asp Leu Gln
                645               650               655

Leu Glu Val Phe Gly Glu Gln Asn His Val Tyr Leu Gly Asp Lys Asn
                660               665               670

Ala Leu Asn Leu Thr Phe His Ala Gln Asn Val Gly Glu Gly Gly Ala
        675               680               685

Tyr Glu Ala Glu Leu Arg Val Thr Ala Pro Pro Glu Ala Glu Tyr Ser
    690               695               700

Gly Leu Val Arg His Pro Gly Asn Phe Ser Ser Leu Ser Cys Asp Tyr
705               710               715               720

Phe Ala Val Asn Gln Ser Arg Leu Leu Val Cys Asp Leu Gly Asn Pro
```

```
                725                   730                   735

Met Lys Ala Gly Ala Ser Leu Trp Gly Gly Leu Arg Phe Thr Val Pro
            740                 745                 750

His Leu Arg Asp Thr Lys Lys Thr Ile Gln Phe Asp Phe Gln Ile Leu
            755                 760                 765

Ser Lys Asn Leu Asn Asn Ser Gln Ser Asp Val Val Ser Phe Arg Leu
    770                 775                 780

Ser Val Glu Ala Gln Ala Gln Val Thr Leu Asn Gly Val Ser Lys Pro
785                 790                 795                 800

Glu Ala Val Leu Phe Pro Val Ser Asp Trp His Pro Arg Asp Gln Pro
                805                 810                 815

Gln Lys Glu Glu Asp Leu Gly Pro Ala Val His His Val Tyr Glu Leu
            820                 825                 830

Ile Asn Gln Gly Pro Ser Ser Ile Ser Gln Gly Val Leu Glu Leu Ser
            835                 840                 845

Cys Pro Gln Ala Leu Glu Gly Gln Gln Leu Leu Tyr Val Thr Arg Val
    850                 855                 860

Thr Gly Leu Asn Cys Thr Thr Asn His Pro Ile Asn Pro Lys Gly Leu
865                 870                 875                 880

Glu Leu Asp Pro Glu Gly Ser Leu His His Gln Gln Lys Arg Glu Ala
                885                 890                 895

Pro Ser Arg Ser Ser Ala Ser Ser Gly Pro Gln Ile Leu Lys Cys Pro
            900                 905                 910

Glu Ala Glu Cys Phe Arg Leu Arg Cys Glu Leu Gly Pro Leu His Gln
            915                 920                 925

Gln Glu Ser Gln Ser Leu Gln Leu His Phe Arg Val Trp Ala Lys Thr
    930                 935                 940

Phe Leu Gln Arg Glu His Gln Pro Phe Ser Leu Gln Cys Glu Ala Val
945                 950                 955                 960

Tyr Lys Ala Leu Lys Met Pro Tyr Arg Ile Leu Pro Arg Gln Leu Pro
            965                 970                 975

Gln Lys Glu Arg Gln Val Ala Thr Ala Val Gln Trp Thr Lys Ala Glu
            980                 985                 990

Gly Ser Tyr Gly Val Pro Leu Trp   Ile Ile Ile Leu Ala   Ile Leu Phe
```

```
              995                  1000                  1005

Gly Leu  Leu Leu Leu Gly Leu  Leu Ile Tyr Ile Leu  Tyr Lys Leu
    1010              1015              1020

Gly Phe  Phe Lys Arg Ser Leu  Pro Tyr Gly Thr Ala  Met Glu Lys
    1025              1030              1035

Ala Gln  Leu Lys Pro Pro Ala  Thr Ser Asp Ala
    1040              1045


<210>  9
<211>  1073
<212>  PRT
<213>  Homo sapiens

<400>  9

Met Ala Ala Ala Gly Gln Leu Cys Leu Leu Tyr Leu Ser Ala Gly Leu
1           5               10              15

Leu Ser Arg Leu Gly Ala Ala Phe Asn Leu Asp Thr Arg Glu Asp Asn
        20              25              30

Val Ile Arg Lys Tyr Gly Asp Pro Gly Ser Leu Phe Gly Phe Ser Leu
        35              40              45

Ala Met His Trp Gln Leu Gln Pro Glu Asp Lys Arg Leu Leu Leu Val
    50              55              60

Gly Ala Pro Arg Gly Glu Ala Leu Pro Leu Gln Arg Ala Asn Arg Thr
65              70              75              80

Gly Gly Leu Tyr Ser Cys Asp Ile Thr Ala Arg Gly Pro Cys Thr Arg
            85              90              95

Ile Glu Phe Asp Asn Asp Ala Asp Pro Thr Ser Glu Ser Lys Glu Asp
            100             105             110

Gln Trp Met Gly Val Thr Val Gln Ser Gln Gly Pro Gly Gly Lys Val
        115             120             125

Val Thr Cys Ala His Arg Tyr Glu Lys Arg Gln His Val Asn Thr Lys
    130             135             140

Gln Glu Ser Arg Asp Ile Phe Gly Arg Cys Tyr Val Leu Ser Gln Asn
145             150             155             160

Leu Arg Ile Glu Asp Asp Met Asp Gly Gly Asp Trp Ser Phe Cys Asp
            165             170             175

Gly Arg Leu Arg Gly His Glu Lys Phe Gly Ser Cys Gln Gln Gly Val
            180             185             190
```

Ala Ala Thr Phe Thr Lys Asp Phe His Tyr Ile Val Phe Gly Ala Pro
    195   200   205

Gly Thr Tyr Asn Trp Lys Gly Ile Val Arg Val Glu Gln Lys Asn Asn
   210   215   220

Thr Phe Phe Asp Met Asn Ile Phe Glu Asp Gly Pro Tyr Glu Val Gly
225   230   235   240

Gly Glu Thr Glu His Asp Glu Ser Leu Val Pro Val Pro Ala Asn Ser
          245   250   255

Tyr Leu Gly Phe Ser Leu Asp Ser Gly Lys Gly Ile Val Ser Lys Asp
         260   265   270

Glu Ile Thr Phe Val Ser Gly Ala Pro Arg Ala Asn His Ser Gly Ala
      275   280   285

Val Val Leu Leu Lys Arg Asp Met Lys Ser Ala His Leu Leu Pro Glu
    290   295   300

His Ile Phe Asp Gly Glu Gly Leu Ala Ser Ser Phe Gly Tyr Asp Val
305   310   315   320

Ala Val Val Asp Leu Asn Lys Asp Gly Trp Gln Asp Ile Val Ile Gly
         325   330   335

Ala Pro Gln Tyr Phe Asp Arg Asp Gly Glu Val Gly Gly Ala Val Tyr
         340   345   350

Val Tyr Met Asn Gln Gln Gly Arg Trp Asn Asn Val Lys Pro Ile Arg
      355   360   365

Leu Asn Gly Thr Lys Asp Ser Met Phe Gly Ile Ala Val Lys Asn Ile
    370   375   380

Gly Asp Ile Asn Gln Asp Gly Tyr Pro Asp Ile Ala Val Gly Ala Pro
385   390   395   400

Tyr Asp Asp Leu Gly Lys Val Phe Ile Tyr His Gly Ser Ala Asn Gly
         405   410   415

Ile Asn Thr Lys Pro Thr Gln Val Leu Lys Gly Ile Ser Pro Tyr Phe
         420   425   430

Gly Tyr Ser Ile Ala Gly Asn Met Asp Leu Asp Arg Asn Ser Tyr Pro
      435   440   445

Asp Val Ala Val Gly Ser Leu Ser Asp Ser Val Thr Ile Phe Arg Ser
    450   455   460

Arg Pro Val Ile Asn Ile Gln Lys Thr Ile Thr Val Thr Pro Asn Arg
465   470   475   480

Ile Asp Leu Arg Gln Lys Thr Ala Cys Gly Ala Pro Ser Gly Ile Cys
                485   490   495

Leu Gln Val Lys Ser Cys Phe Glu Tyr Thr Ala Asn Pro Ala Gly Tyr
                500   505   510

Asn Pro Ser Ile Ser Ile Val Gly Thr Leu Glu Ala Glu Lys Glu Arg
                515   520   525

Arg Lys Ser Gly Leu Ser Ser Arg Val Gln Phe Arg Asn Gln Gly Ser
                530   535   540

Glu Pro Lys Tyr Thr Gln Glu Leu Thr Leu Lys Arg Gln Lys Gln Lys
545   550   555   560

Val Cys Met Glu Glu Thr Leu Trp Leu Gln Asp Asn Ile Arg Asp Lys
                565   570   575

Leu Arg Pro Ile Pro Ile Thr Ala Ser Val Glu Ile Gln Glu Pro Ser
                580   585   590

Ser Arg Arg Arg Val Asn Ser Leu Pro Glu Val Leu Pro Ile Leu Asn
                595   600   605

Ser Asp Glu Pro Lys Thr Ala His Ile Asp Val His Phe Leu Lys Glu
610   615   620

Gly Cys Gly Asp Asp Asn Val Cys Asn Ser Asn Leu Lys Leu Glu Tyr
625   630   635   640

Lys Phe Cys Thr Arg Glu Gly Asn Gln Asp Lys Phe Ser Tyr Leu Pro
                645   650   655

Ile Gln Lys Gly Val Pro Glu Leu Val Leu Lys Asp Gln Lys Asp Ile
                660   665   670

Ala Leu Glu Ile Thr Val Thr Asn Ser Pro Ser Asn Pro Arg Asn Pro
                675   680   685

Thr Lys Asp Gly Asp Asp Ala His Glu Ala Lys Leu Ile Ala Thr Phe
690   695   700

Pro Asp Thr Leu Thr Tyr Ser Ala Tyr Arg Glu Leu Arg Ala Phe Pro
705   710   715   720

Glu Lys Gln Leu Ser Cys Val Ala Asn Gln Asn Gly Ser Gln Ala Asp
                725   730   735

```
Cys Glu Leu Gly Asn Pro Phe Lys Arg Asn Ser Asn Val Thr Phe Tyr
            740             745             750

Leu Val Leu Ser Thr Thr Glu Val Thr Phe Asp Thr Pro Tyr Leu Asp
            755             760             765

Ile Asn Leu Lys Leu Glu Thr Thr Ser Asn Gln Asp Asn Leu Ala Pro
    770             775             780

Ile Thr Ala Lys Ala Lys Val Val Ile Glu Leu Leu Leu Ser Val Ser
785             790             795             800

Gly Val Ala Lys Pro Ser Gln Val Tyr Phe Gly Gly Thr Val Val Gly
            805             810             815

Glu Gln Ala Met Lys Ser Glu Asp Glu Val Gly Ser Leu Ile Glu Tyr
            820             825             830

Glu Phe Arg Val Ile Asn Leu Gly Lys Pro Leu Thr Asn Leu Gly Thr
            835             840             845

Ala Thr Leu Asn Ile Gln Trp Pro Lys Glu Ile Ser Asn Gly Lys Trp
    850             855             860

Leu Leu Tyr Leu Val Lys Val Glu Ser Lys Gly Leu Glu Lys Val Thr
865             870             875             880

Cys Glu Pro Gln Lys Glu Ile Asn Ser Leu Asn Leu Thr Glu Ser His
            885             890             895

Asn Ser Arg Lys Lys Arg Glu Ile Thr Glu Lys Gln Ile Asp Asp Asn
            900             905             910

Arg Lys Phe Ser Leu Phe Ala Glu Arg Lys Tyr Gln Thr Leu Asn Cys
            915             920             925

Ser Val Asn Val Asn Cys Val Asn Ile Arg Cys Pro Leu Arg Gly Leu
    930             935             940

Asp Ser Lys Ala Ser Leu Ile Leu Arg Ser Arg Leu Trp Asn Ser Thr
945             950             955             960

Phe Leu Glu Glu Tyr Ser Lys Leu Asn Tyr Leu Asp Ile Leu Met Arg
            965             970             975

Ala Phe Ile Asp Val Thr Ala Ala Ala Glu Asn Ile Arg Leu Pro Asn
            980             985             990

Ala Gly Thr Gln Val Arg Val Thr Val Phe Pro Ser Lys Thr Val Ala
    995             1000            1005
```

Gln Tyr Ser Gly Val Pro Trp Trp Ile Ile Leu Val Ala Ile Leu
    1010   1015   1020

Ala Gly Ile Leu Met Leu Ala Leu Leu Val Phe Ile Leu Trp Lys
    1025   1030   1035

Cys Gly Phe Phe Lys Arg Asn Lys Lys Asp His Tyr Asp Ala Thr
    1040   1045   1050

Tyr His Lys Ala Glu Ile His Ala Gln Pro Ser Asp Lys Glu Arg
    1055   1060   1065

Leu Thr Ser Asp Ala
    1070

<210> 10
<211> 789
<212> PRT
<213> Homo sapiens

<400> 10

Met Asn Leu Gln Pro Ile Phe Trp Ile Gly Leu Ile Ser Ser Val Cys
1   5   10   15

Cys Val Phe Ala Gln Thr Asp Glu Asn Arg Cys Leu Lys Ala Asn Ala
            20   25   30

Lys Ser Cys Gly Glu Cys Ile Gln Ala Gly Pro Asn Cys Gly Trp Cys
        35   40   45

Thr Asn Ser Thr Phe Leu Gln Glu Gly Met Pro Thr Ser Ala Arg Cys
    50   55   60

Asp Asp Leu Glu Ala Leu Lys Lys Lys Gly Cys Pro Pro Asp Asp Ile
65   70   75   80

Glu Asn Pro Arg Gly Ser Lys Asp Ile Lys Lys Asn Lys Asn Val Thr
                85   90   95

Asn Arg Ser Lys Gly Thr Ala Glu Lys Leu Lys Pro Glu Asp Ile Thr
            100   105   110

Gln Ile Gln Pro Gln Gln Leu Val Leu Arg Leu Arg Ser Gly Glu Pro
        115   120   125

Gln Thr Phe Thr Leu Lys Phe Lys Arg Ala Glu Asp Tyr Pro Ile Asp
    130   135   140

Leu Tyr Tyr Leu Met Asp Leu Ser Tyr Ser Met Lys Asp Asp Leu Glu
145   150   155   160

Asn Val Lys Ser Leu Gly Thr Asp Leu Met Asn Glu Met Arg Arg Ile
          165   170   175

Thr Ser Asp Phe Arg Ile Gly Phe Gly Ser Phe Val Glu Lys Thr Val
          180   185   190

Met Pro Tyr Ile Ser Thr Thr Pro Ala Lys Leu Arg Asn Pro Cys Thr
          195   200   205

Ser Glu Gln Asn Cys Thr Ser Pro Phe Ser Tyr Lys Asn Val Leu Ser
    210   215   220

Leu Thr Asn Lys Gly Glu Val Phe Asn Glu Leu Val Gly Lys Gln Arg
225   230   235   240

Ile Ser Gly Asn Leu Asp Ser Pro Glu Gly Gly Phe Asp Ala Ile Met
          245   250   255

Gln Val Ala Val Cys Gly Ser Leu Ile Gly Trp Arg Asn Val Thr Arg
          260   265   270

Leu Leu Val Phe Ser Thr Asp Ala Gly Phe His Phe Ala Gly Asp Gly
          275   280   285

Lys Leu Gly Gly Ile Val Leu Pro Asn Asp Gly Gln Cys His Leu Glu
          290   295   300

Asn Asn Met Tyr Thr Met Ser His Tyr Tyr Asp Tyr Pro Ser Ile Ala
305   310   315   320

His Leu Val Gln Lys Leu Ser Glu Asn Asn Ile Gln Thr Ile Phe Ala
          325   330   335

Val Thr Glu Glu Phe Gln Pro Val Tyr Lys Glu Leu Lys Asn Leu Ile
          340   345   350

Pro Lys Ser Ala Val Gly Thr Leu Ser Ala Asn Ser Ser Asn Val Ile
          355   360   365

Gln Leu Ile Ile Asp Ala Tyr Asn Ser Leu Ser Ser Glu Val Ile Leu
          370   375   380

Glu Asn Gly Lys Leu Ser Glu Gly Val Thr Ile Ser Tyr Lys Ser Tyr
385   390   395   400

Cys Lys Asn Gly Val Asn Gly Thr Gly Glu Asn Gly Arg Lys Cys Ser
          405   410   415

Asn Ile Ser Ile Gly Asp Glu Val Gln Phe Glu Ile Ser Ile Thr Ser
          420   425   430

```
Asn Lys Cys Pro Lys Lys Asp Ser Asp Ser Phe Lys Ile Arg Pro Leu
    435             440             445

Gly Phe Thr Glu Glu Val Glu Val Ile Leu Gln Tyr Ile Cys Glu Cys
    450             455             460

Glu Cys Gln Ser Glu Gly Ile Pro Glu Ser Pro Lys Cys His Glu Gly
465             470             475             480

Asn Gly Thr Phe Glu Cys Gly Ala Cys Arg Cys Asn Glu Gly Arg Val
            485             490             495

Gly Arg His Cys Glu Cys Ser Thr Asp Glu Val Asn Ser Glu Asp Met
        500             505             510

Asp Ala Tyr Cys Arg Lys Glu Asn Ser Ser Glu Ile Cys Ser Asn Asn
        515             520             525

Gly Glu Cys Val Cys Gly Gln Cys Val Cys Arg Lys Arg Asp Asn Thr
    530             535             540

Asn Glu Ile Tyr Ser Gly Lys Phe Cys Glu Cys Asp Asn Phe Asn Cys
545             550             555             560

Asp Arg Ser Asn Gly Leu Ile Cys Gly Gly Asn Gly Val Cys Lys Cys
            565             570             575

Arg Val Cys Glu Cys Asn Pro Asn Tyr Thr Gly Ser Ala Cys Asp Cys
        580             585             590

Ser Leu Asp Thr Ser Thr Cys Glu Ala Ser Asn Gly Gln Ile Cys Asn
        595             600             605

Gly Arg Gly Ile Cys Glu Cys Gly Val Cys Lys Cys Thr Asp Pro Lys
    610             615             620

Phe Gln Gly Gln Thr Cys Glu Met Cys Gln Thr Cys Leu Gly Val Cys
625             630             635             640

Ala Glu His Lys Glu Cys Val Gln Cys Arg Ala Phe Asn Lys Gly Glu
            645             650             655

Lys Lys Asp Thr Cys Thr Gln Glu Cys Ser Tyr Phe Asn Ile Thr Lys
            660             665             670

Val Glu Ser Arg Asp Lys Leu Pro Gln Pro Val Gln Pro Asp Pro Val
        675             680             685

Ser His Cys Lys Glu Lys Asp Val Asp Asp Cys Trp Phe Tyr Phe Thr
    690             695             700
```

Tyr Ser Val Asn Gly Asn Asn Glu Val Met Val His Val Val Glu Asn
705   710   715   720

Pro Glu Cys Pro Thr Gly Pro Asp Ile Ile Pro Ile Val Ala Gly Val
                725   730   735

Val Ala Gly Ile Val Leu Ile Gly Leu Ala Leu Leu Leu Ile Trp Lys
            740   745   750

Leu Leu Met Ile Ile His Asp Arg Arg Glu Phe Ala Lys Phe Glu Lys
        755   760   765

Glu Lys Met Asn Ala Lys Trp Asp Thr Val Ser Tyr Lys Thr Ser Lys
    770   775   780

Lys Gln Ser Gly Leu
785

<210> 11
<211> 825
<212> PRT
<213> Homo sapiens

<400> 11

Met Asn Leu Gln Pro Ile Phe Trp Ile Gly Leu Ile Ser Ser Val Cys
1   5   10   15

Cys Val Phe Ala Gln Thr Asp Glu Asn Arg Cys Leu Lys Ala Asn Ala
            20   25   30

Lys Ser Cys Gly Glu Cys Ile Gln Ala Gly Pro Asn Cys Gly Trp Cys
        35   40   45

Thr Asn Ser Thr Phe Leu Gln Glu Gly Met Pro Thr Ser Ala Arg Cys
    50   55   60

Asp Asp Leu Glu Ala Leu Lys Lys Lys Gly Cys Pro Pro Asp Asp Ile
65   70   75   80

Glu Asn Pro Arg Gly Ser Lys Asp Ile Lys Lys Asn Lys Asn Val Thr
                85   90   95

Asn Arg Ser Lys Gly Thr Ala Glu Lys Leu Lys Pro Glu Asp Ile Thr
                100   105   110

Gln Ile Gln Pro Gln Gln Leu Val Leu Arg Leu Arg Ser Gly Glu Pro
            115   120   125

Gln Thr Phe Thr Leu Lys Phe Lys Arg Ala Glu Asp Tyr Pro Ile Asp
        130   135   140

Leu Tyr Tyr Leu Met Asp Leu Ser Tyr Ser Met Lys Asp Asp Leu Glu
145   150   155   160

Asn Val Lys Ser Leu Gly Thr Asp Leu Met Asn Glu Met Arg Arg Ile
                    165   170   175

Thr Ser Asp Phe Arg Ile Gly Phe Gly Ser Phe Val Glu Lys Thr Val
                180   185   190

Met Pro Tyr Ile Ser Thr Thr Pro Ala Lys Leu Arg Asn Pro Cys Thr
            195   200   205

Ser Glu Gln Asn Cys Thr Ser Pro Phe Ser Tyr Lys Asn Val Leu Ser
        210   215   220

Leu Thr Asn Lys Gly Glu Val Phe Asn Glu Leu Val Gly Lys Gln Arg
225   230   235   240

Ile Ser Gly Asn Leu Asp Ser Pro Glu Gly Gly Phe Asp Ala Ile Met
                245   250   255

Gln Val Ala Val Cys Gly Ser Leu Ile Gly Trp Arg Asn Val Thr Arg
            260   265   270

Leu Leu Val Phe Ser Thr Asp Ala Gly Phe His Phe Ala Gly Asp Gly
        275   280   285

Lys Leu Gly Gly Ile Val Leu Pro Asn Asp Gly Gln Cys His Leu Glu
    290   295   300

Asn Asn Met Tyr Thr Met Ser His Tyr Tyr Asp Tyr Pro Ser Ile Ala
305   310   315   320

His Leu Val Gln Lys Leu Ser Glu Asn Asn Ile Gln Thr Ile Phe Ala
            325   330   335

Val Thr Glu Glu Phe Gln Pro Val Tyr Lys Glu Leu Lys Asn Leu Ile
            340   345   350

Pro Lys Ser Ala Val Gly Thr Leu Ser Ala Asn Ser Ser Asn Val Ile
        355   360   365

Gln Leu Ile Ile Asp Ala Tyr Asn Ser Leu Ser Ser Glu Val Ile Leu
    370   375   380

Glu Asn Gly Lys Leu Ser Glu Gly Val Thr Ile Ser Tyr Lys Ser Tyr
385   390   395   400

Cys Lys Asn Gly Val Asn Gly Thr Gly Glu Asn Gly Arg Lys Cys Ser
                405   410   415

```
Asn Ile Ser Ile Gly Asp Glu Val Gln Phe Glu Ile Ser Ile Thr Ser
            420                 425             430

Asn Lys Cys Pro Lys Lys Asp Ser Asp Ser Phe Lys Ile Arg Pro Leu
        435             440             445

Gly Phe Thr Glu Glu Val Glu Val Ile Leu Gln Tyr Ile Cys Glu Cys
    450             455             460

Glu Cys Gln Ser Glu Gly Ile Pro Glu Ser Pro Lys Cys His Glu Gly
465             470             475             480

Asn Gly Thr Phe Glu Cys Gly Ala Cys Arg Cys Asn Glu Gly Arg Val
            485             490             495

Gly Arg His Cys Glu Cys Ser Thr Asp Glu Val Asn Ser Glu Asp Met
        500             505             510

Asp Ala Tyr Cys Arg Lys Glu Asn Ser Ser Glu Ile Cys Ser Asn Asn
        515             520             525

Gly Glu Cys Val Cys Gly Gln Cys Val Cys Arg Lys Arg Asp Asn Thr
    530             535             540

Asn Glu Ile Tyr Ser Gly Lys Phe Cys Glu Cys Asp Asn Phe Asn Cys
545             550             555             560

Asp Arg Ser Asn Gly Leu Ile Cys Gly Gly Asn Gly Val Cys Lys Cys
            565             570             575

Arg Val Cys Glu Cys Asn Pro Asn Tyr Thr Gly Ser Ala Cys Asp Cys
        580             585             590

Ser Leu Asp Thr Ser Thr Cys Glu Ala Ser Asn Gly Gln Ile Cys Asn
        595             600             605

Gly Arg Gly Ile Cys Glu Cys Gly Val Cys Lys Cys Thr Asp Pro Lys
    610             615             620

Phe Gln Gly Gln Thr Cys Glu Met Cys Gln Thr Cys Leu Gly Val Cys
625             630             635             640

Ala Glu His Lys Glu Cys Val Gln Cys Arg Ala Phe Asn Lys Gly Glu
            645             650             655

Lys Lys Asp Thr Cys Thr Gln Glu Cys Ser Tyr Phe Asn Ile Thr Lys
            660             665             670

Val Glu Ser Arg Asp Lys Leu Pro Gln Pro Val Gln Pro Asp Pro Val
        675             680             685
```

Ser His Cys Lys Glu Lys Asp Val Asp Asp Cys Trp Phe Tyr Phe Thr
  690   695   700

Tyr Ser Val Asn Gly Asn Asn Glu Val Met Val His Val Val Glu Asn
705   710   715   720

Pro Glu Cys Pro Thr Gly Pro Asp Ile Ile Pro Ile Val Ala Gly Val
         725   730   735

Val Ala Gly Ile Val Leu Ile Gly Leu Ala Leu Leu Leu Ile Trp Lys
       740   745   750

Leu Leu Met Ile Ile His Asp Arg Arg Glu Phe Ala Lys Phe Glu Lys
      755   760   765

Glu Lys Met Asn Ala Lys Trp Asp Thr Ser Leu Ser Val Ala Gln Pro
  770   775   780

Gly Val Gln Trp Cys Asp Ile Ser Ser Leu Gln Pro Leu Thr Ser Arg
785   790   795   800

Phe Gln Gln Phe Ser Cys Leu Ser Leu Pro Ser Thr Trp Asp Tyr Arg
         805   810   815

Val Lys Ile Leu Phe Ile Arg Val Pro
      820   825

<210> 12
<211> 819
<212> PRT
<213> Homo sapiens

<400> 12

Met Asn Leu Gln Pro Ile Phe Trp Ile Gly Leu Ile Ser Ser Val Cys
1   5   10   15

Cys Val Phe Ala Gln Thr Asp Glu Asn Arg Cys Leu Lys Ala Asn Ala
         20   25   30

Lys Ser Cys Gly Glu Cys Ile Gln Ala Gly Pro Asn Cys Gly Trp Cys
      35   40   45

Thr Asn Ser Thr Phe Leu Gln Glu Gly Met Pro Thr Ser Ala Arg Cys
  50   55   60

Asp Asp Leu Glu Ala Leu Lys Lys Lys Gly Cys Pro Pro Asp Asp Ile
65   70   75   80

Glu Asn Pro Arg Gly Ser Lys Asp Ile Lys Lys Asn Lys Asn Val Thr
         85   90   95

Asn Arg Ser Lys Gly Thr Ala Glu Lys Leu Lys Pro Glu Asp Ile Thr

                        100   105   110

Gln Ile Gln Pro Gln Gln Leu Val Leu Arg Leu Arg Ser Gly Glu Pro
        115   120   125

Gln Thr Phe Thr Leu Lys Phe Lys Arg Ala Glu Asp Tyr Pro Ile Asp
    130   135   140

Leu Tyr Tyr Leu Met Asp Leu Ser Tyr Ser Met Lys Asp Asp Leu Glu
145   150   155   160

Asn Val Lys Ser Leu Gly Thr Asp Leu Met Asn Glu Met Arg Arg Ile
                165   170   175

Thr Ser Asp Phe Arg Ile Gly Phe Gly Ser Phe Val Glu Lys Thr Val
            180   185   190

Met Pro Tyr Ile Ser Thr Thr Pro Ala Lys Leu Arg Asn Pro Cys Thr
        195   200   205

Ser Glu Gln Asn Cys Thr Ser Pro Phe Ser Tyr Lys Asn Val Leu Ser
    210   215   220

Leu Thr Asn Lys Gly Glu Val Phe Asn Glu Leu Val Gly Lys Gln Arg
225   230   235   240

Ile Ser Gly Asn Leu Asp Ser Pro Glu Gly Gly Phe Asp Ala Ile Met
            245   250   255

Gln Val Ala Val Cys Gly Ser Leu Ile Gly Trp Arg Asn Val Thr Arg
        260   265   270

Leu Leu Val Phe Ser Thr Asp Ala Gly Phe His Phe Ala Gly Asp Gly
        275   280   285

Lys Leu Gly Gly Ile Val Leu Pro Asn Asp Gly Gln Cys His Leu Glu
    290   295   300

Asn Asn Met Tyr Thr Met Ser His Tyr Tyr Asp Tyr Pro Ser Ile Ala
305   310   315   320

His Leu Val Gln Lys Leu Ser Glu Asn Asn Ile Gln Thr Ile Phe Ala
                325   330   335

Val Thr Glu Glu Phe Gln Pro Val Tyr Lys Glu Leu Lys Asn Leu Ile
            340   345   350

Pro Lys Ser Ala Val Gly Thr Leu Ser Ala Asn Ser Ser Asn Val Ile
        355   360   365

Gln Leu Ile Ile Asp Ala Tyr Asn Ser Leu Ser Ser Glu Val Ile Leu

Glu Asn Gly Lys Leu Ser Glu Gly Val Thr Ile Ser Tyr Lys Ser Tyr
385   390   395   400

Cys Lys Asn Gly Val Asn Gly Thr Gly Glu Asn Gly Arg Lys Cys Ser
                    405   410   415

Asn Ile Ser Ile Gly Asp Glu Val Gln Phe Glu Ile Ser Ile Thr Ser
                    420   425   430

Asn Lys Cys Pro Lys Lys Asp Ser Asp Ser Phe Lys Ile Arg Pro Leu
                    435   440   445

Gly Phe Thr Glu Glu Val Glu Val Ile Leu Gln Tyr Ile Cys Glu Cys
    450   455   460

Glu Cys Gln Ser Glu Gly Ile Pro Glu Ser Pro Lys Cys His Glu Gly
465   470   475   480

Asn Gly Thr Phe Glu Cys Gly Ala Cys Arg Cys Asn Glu Gly Arg Val
                    485   490   495

Gly Arg His Cys Glu Cys Ser Thr Asp Glu Val Asn Ser Glu Asp Met
                    500   505   510

Asp Ala Tyr Cys Arg Lys Glu Asn Ser Ser Glu Ile Cys Ser Asn Asn
                    515   520   525

Gly Glu Cys Val Cys Gly Gln Cys Val Cys Arg Lys Arg Asp Asn Thr
    530   535   540

Asn Glu Ile Tyr Ser Gly Lys Phe Cys Glu Cys Asp Asn Phe Asn Cys
545   550   555   560

Asp Arg Ser Asn Gly Leu Ile Cys Gly Gly Asn Gly Val Cys Lys Cys
                    565   570   575

Arg Val Cys Glu Cys Asn Pro Asn Tyr Thr Gly Ser Ala Cys Asp Cys
                    580   585   590

Ser Leu Asp Thr Ser Thr Cys Glu Ala Ser Asn Gly Gln Ile Cys Asn
                    595   600   605

Gly Arg Gly Ile Cys Glu Cys Gly Val Cys Lys Cys Thr Asp Pro Lys
    610   615   620

Phe Gln Gly Gln Thr Cys Glu Met Cys Gln Thr Cys Leu Gly Val Cys
625   630   635   640

Ala Glu His Lys Glu Cys Val Gln Cys Arg Ala Phe Asn Lys Gly Glu

```
              645                   650                  655

Lys Lys Asp Thr Cys Thr Gln Glu Cys Ser Tyr Phe Asn Ile Thr Lys
            660                   665                  670

Val Glu Ser Arg Asp Lys Leu Pro Gln Pro Val Gln Pro Asp Pro Val
            675                   680                  685

Ser His Cys Lys Glu Lys Asp Val Asp Asp Cys Trp Phe Tyr Phe Thr
    690                   695                  700

Tyr Ser Val Asn Gly Asn Asn Glu Val Met Val His Val Val Glu Asn
705                   710                  715                  720

Pro Glu Cys Pro Thr Gly Pro Asp Ile Ile Pro Ile Val Ala Gly Val
                725                   730                  735

Val Ala Gly Ile Val Leu Ile Gly Leu Ala Leu Leu Leu Ile Trp Lys
            740                   745                  750

Leu Leu Met Ile Ile His Asp Arg Arg Glu Phe Ala Lys Phe Glu Lys
        755                   760                  765

Glu Lys Met Asn Ala Lys Trp Asp Thr Pro Gly Val Gln Trp Cys Asp
    770                   775                  780

Ile Ser Ser Leu Gln Pro Leu Thr Ser Arg Phe Gln Gln Phe Ser Cys
785                   790                  795                  800

Leu Ser Leu Pro Ser Thr Trp Asp Tyr Arg Val Lys Ile Leu Phe Ile
                805                   810                  815

Arg Val Pro
```

```
Met Asn Leu Gln Pro Ile Phe Trp Ile Gly Leu Ile Ser Ser Val Cys
1               5                   10                  15

Cys Val Phe Ala Gln Thr Asp Glu Asn Arg Cys Leu Lys Ala Asn Ala
            20                   25                  30

Lys Ser Cys Gly Glu Cys Ile Gln Ala Gly Pro Asn Cys Gly Trp Cys
        35                   40                  45

Thr Asn Ser Thr Phe Leu Gln Glu Gly Met Pro Thr Ser Ala Arg Cys
    50                   55                  60
```

```
Asp Asp Leu Glu Ala Leu Lys Lys Lys Gly Cys Pro Pro Asp Asp Ile
65              70              75              80

Glu Asn Pro Arg Gly Ser Lys Asp Ile Lys Lys Asn Lys Asn Val Thr
            85              90                  95

Asn Arg Ser Lys Gly Thr Ala Glu Lys Leu Lys Pro Glu Asp Ile Thr
        100                 105             110

Gln Ile Gln Pro Gln Gln Leu Val Leu Arg Leu Arg Ser Gly Glu Pro
        115             120             125

Gln Thr Phe Thr Leu Lys Phe Lys Arg Ala Glu Asp Tyr Pro Ile Asp
    130             135             140

Leu Tyr Tyr Leu Met Asp Leu Ser Tyr Ser Met Lys Asp Asp Leu Glu
145             150             155             160

Asn Val Lys Ser Leu Gly Thr Asp Leu Met Asn Glu Met Arg Arg Ile
            165             170             175

Thr Ser Asp Phe Arg Ile Gly Phe Gly Ser Phe Val Glu Lys Thr Val
            180             185             190

Met Pro Tyr Ile Ser Thr Thr Pro Ala Lys Leu Arg Asn Pro Cys Thr
        195             200             205

Ser Glu Gln Asn Cys Thr Ser Pro Phe Ser Tyr Lys Asn Val Leu Ser
    210             215             220

Leu Thr Asn Lys Gly Glu Val Phe Asn Glu Leu Val Gly Lys Gln Arg
225             230             235             240

Ile Ser Gly Asn Leu Asp Ser Pro Glu Gly Gly Phe Asp Ala Ile Met
            245             250             255

Gln Val Ala Val Cys Gly Ser Leu Ile Gly Trp Arg Asn Val Thr Arg
            260             265             270

Leu Leu Val Phe Ser Thr Asp Ala Gly Phe His Phe Ala Gly Asp Gly
        275             280             285

Lys Leu Gly Gly Ile Val Leu Pro Asn Asp Gly Gln Cys His Leu Glu
    290             295             300

Asn Asn Met Tyr Thr Met Ser His Tyr Tyr Asp Tyr Pro Ser Ile Ala
305             310             315             320

His Leu Val Gln Lys Leu Ser Glu Asn Asn Ile Gln Thr Ile Phe Ala
            325             330             335
```

Val Thr Glu Glu Phe Gln Pro Val Tyr Lys Glu Leu Lys Asn Leu Ile
       340   345   350

Pro Lys Ser Ala Val Gly Thr Leu Ser Ala Asn Ser Ser Asn Val Ile
       355   360   365

Gln Leu Ile Ile Asp Ala Tyr Asn Ser Leu Ser Ser Glu Val Ile Leu
    370   375   380

Glu Asn Gly Lys Leu Ser Glu Gly Val Thr Ile Ser Tyr Lys Ser Tyr
385   390   395   400

Cys Lys Asn Gly Val Asn Gly Thr Gly Glu Asn Gly Arg Lys Cys Ser
       405   410   415

Asn Ile Ser Ile Gly Asp Glu Val Gln Phe Glu Ile Ser Ile Thr Ser
       420   425   430

Asn Lys Cys Pro Lys Lys Asp Ser Asp Ser Phe Lys Ile Arg Pro Leu
       435   440   445

Gly Phe Thr Glu Glu Val Glu Val Ile Leu Gln Tyr Ile Cys Glu Cys
    450   455   460

Glu Cys Gln Ser Glu Gly Ile Pro Glu Ser Pro Lys Cys His Glu Gly
465   470   475   480

Asn Gly Thr Phe Glu Cys Gly Ala Cys Arg Cys Asn Glu Gly Arg Val
       485   490   495

Gly Arg His Cys Glu Cys Ser Thr Asp Glu Val Asn Ser Glu Asp Met
       500   505   510

Asp Ala Tyr Cys Arg Lys Glu Asn Ser Ser Glu Ile Cys Ser Asn Asn
       515   520   525

Gly Glu Cys Val Cys Gly Gln Cys Val Cys Arg Lys Arg Asp Asn Thr
    530   535   540

Asn Glu Ile Tyr Ser Gly Lys Phe Cys Glu Cys Asp Asn Phe Asn Cys
545   550   555   560

Asp Arg Ser Asn Gly Leu Ile Cys Gly Gly Asn Gly Val Cys Lys Cys
       565   570   575

Arg Val Cys Glu Cys Asn Pro Asn Tyr Thr Gly Ser Ala Cys Asp Cys
       580   585   590

Ser Leu Asp Thr Ser Thr Cys Glu Ala Ser Asn Gly Gln Ile Cys Asn
       595   600   605

Gly Arg Gly Ile Cys Glu Cys Gly Val Cys Lys Cys Thr Asp Pro Lys
   610   615   620

Phe Gln Gly Gln Thr Cys Glu Met Cys Gln Thr Cys Leu Gly Val Cys
625   630   635   640

Ala Glu His Lys Glu Cys Val Gln Cys Arg Ala Phe Asn Lys Gly Glu
          645   650   655

Lys Lys Asp Thr Cys Thr Gln Glu Cys Ser Tyr Phe Asn Ile Thr Lys
          660   665   670

Val Glu Ser Arg Asp Lys Leu Pro Gln Pro Val Gln Pro Asp Pro Val
          675   680   685

Ser His Cys Lys Glu Lys Asp Val Asp Asp Cys Trp Phe Tyr Phe Thr
   690   695   700

Tyr Ser Val Asn Gly Asn Asn Glu Val Met Val His Val Val Glu Asn
705   710   715   720

Pro Glu Cys Pro Thr Gly Pro Asp Ile Ile Pro Ile Val Ala Gly Val
          725   730   735

Val Ala Gly Ile Val Leu Ile Gly Leu Ala Leu Leu Leu Ile Trp Lys
          740   745   750

Leu Leu Met Ile Ile His Asp Arg Arg Glu Phe Ala Lys Phe Glu Lys
          755   760   765

Glu Lys Met Asn Ala Lys Trp Asp Thr Gln Glu Asn Pro Ile Tyr Lys
   770   775   780

Ser Pro Ile Asn Asn Phe Lys Asn Pro Asn Tyr Gly Arg Lys Ala Gly
785   790   795   800

Leu

<210> 14
<211> 1066
<212> PRT
<213> Homo sapiens

<400> 14

Met Gly Pro Gly Pro Ser Arg Ala Pro Arg Ala Pro Arg Leu Met Leu
1   5   10   15

Cys Ala Leu Ala Leu Met Val Ala Ala Gly Gly Cys Val Val Ser Ala
          20   25   30

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Phe Asn Leu Asp Thr Arg Phe Leu Val Val Lys Glu Ala Gly Asn Pro
        35                  40                  45

Gly Ser Leu Phe Gly Tyr Ser Val Ala Leu His Arg Gln Thr Glu Arg
    50                  55                  60

Gln Gln Arg Tyr Leu Leu Leu Ala Gly Ala Pro Arg Glu Leu Ala Val
65                  70                  75                  80

Pro Asp Gly Tyr Thr Asn Arg Thr Gly Ala Val Tyr Leu Cys Pro Leu
                85                  90                  95

Thr Ala His Lys Asp Asp Cys Glu Arg Met Asn Ile Thr Val Lys Asn
                100                 105                 110

Asp Pro Gly His His Ile Ile Glu Asp Met Trp Leu Gly Val Thr Val
            115                 120                 125

Ala Ser Gln Gly Pro Ala Gly Arg Val Leu Val Cys Ala His Arg Tyr
    130                 135                 140

Thr Gln Val Leu Trp Ser Gly Ser Glu Asp Gln Arg Arg Met Val Gly
145                 150                 155                 160

Lys Cys Tyr Val Arg Gly Asn Asp Leu Glu Leu Asp Ser Ser Asp Asp
                165                 170                 175

Trp Gln Thr Tyr His Asn Glu Met Cys Asn Ser Asn Thr Asp Tyr Leu
                180                 185                 190

Glu Thr Gly Met Cys Gln Leu Gly Thr Ser Gly Gly Phe Thr Gln Asn
            195                 200                 205

Thr Val Tyr Phe Gly Ala Pro Gly Ala Tyr Asn Trp Lys Gly Asn Ser
210                 215                 220

Tyr Met Ile Gln Arg Lys Glu Trp Asp Leu Ser Glu Tyr Ser Tyr Lys
225                 230                 235                 240

Asp Pro Glu Asp Gln Gly Asn Leu Tyr Ile Gly Tyr Thr Met Gln Val
                245                 250                 255

Gly Ser Phe Ile Leu His Pro Lys Asn Ile Thr Ile Val Thr Gly Ala
            260                 265                 270

Pro Arg His Arg His Met Gly Ala Val Phe Leu Leu Ser Gln Glu Ala
    275                 280                 285

Gly Gly Asp Leu Arg Arg Arg Gln Val Leu Glu Gly Ser Gln Val Gly
    290                 295                 300
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Ala Tyr Phe Gly Ser Ala Ile Ala Leu Ala Asp Leu Asn Asn Asp Gly
305   310   315   320

Trp Gln Asp Leu Leu Val Gly Ala Pro Tyr Tyr Phe Glu Arg Lys Glu
         325   330   335

Glu Val Gly Gly Ala Ile Tyr Val Phe Met Asn Gln Ala Gly Thr Ser
         340   345   350

Phe Pro Ala His Pro Ser Leu Leu Leu His Gly Pro Ser Gly Ser Ala
         355   360   365

Phe Gly Leu Ser Val Ala Ser Ile Gly Asp Ile Asn Gln Asp Gly Phe
    370   375   380

Gln Asp Ile Ala Val Gly Ala Pro Phe Glu Gly Leu Gly Lys Val Tyr
385   390   395   400

Ile Tyr His Ser Ser Ser Lys Gly Leu Leu Arg Gln Pro Gln Gln Val
         405   410   415

Ile His Gly Glu Lys Leu Gly Leu Pro Gly Leu Ala Thr Phe Gly Tyr
         420   425   430

Ser Leu Ser Gly Gln Met Asp Val Asp Glu Asn Phe Tyr Pro Asp Leu
         435   440   445

Leu Val Gly Ser Leu Ser Asp His Ile Val Leu Leu Arg Ala Arg Pro
    450   455   460

Val Ile Asn Ile Val His Lys Thr Leu Val Pro Arg Pro Ala Val Leu
465   470   475   480

Asp Pro Ala Leu Cys Thr Ala Thr Ser Cys Val Gln Val Glu Leu Cys
              485   490   495

Phe Ala Tyr Asn Gln Ser Ala Gly Asn Pro Asn Tyr Arg Arg Asn Ile
         500   505   510

Thr Leu Ala Tyr Thr Leu Glu Ala Asp Arg Asp Arg Arg Pro Pro Arg
         515   520   525

Leu Arg Phe Ala Gly Ser Glu Ser Ala Val Phe His Gly Phe Phe Ser
    530   535   540

Met Pro Glu Met Arg Cys Gln Lys Leu Glu Leu Leu Leu Met Asp Asn
545   550   555   560

Leu Arg Asp Lys Leu Arg Pro Ile Ile Ile Ser Met Asn Tyr Ser Leu
         565   570   575

Pro Leu Arg Met Pro Asp Arg Pro Arg Leu Gly Leu Arg Ser Leu Asp
        580   585   590

Ala Tyr Pro Ile Leu Asn Gln Ala Gln Ala Leu Glu Asn His Thr Glu
      595   600   605

Val Gln Phe Gln Lys Glu Cys Gly Pro Asp Asn Lys Cys Glu Ser Asn
   610   615   620

Leu Gln Met Arg Ala Ala Phe Val Ser Glu Gln Gln Gln Lys Leu Ser
625   630   635   640

Arg Leu Gln Tyr Ser Arg Asp Val Arg Lys Leu Leu Leu Ser Ile Asn
        645   650   655

Val Thr Asn Thr Arg Thr Ser Glu Arg Ser Gly Glu Asp Ala His Glu
      660   665   670

Ala Leu Leu Thr Leu Val Val Pro Pro Ala Leu Leu Leu Ser Ser Val
      675   680   685

Arg Pro Pro Gly Ala Cys Gln Ala Asn Glu Thr Ile Phe Cys Glu Leu
   690   695   700

Gly Asn Pro Phe Lys Arg Asn Gln Arg Met Glu Leu Leu Ile Ala Phe
705   710   715   720

Glu Val Ile Gly Val Thr Leu His Thr Arg Asp Leu Gln Val Gln Leu
        725   730   735

Gln Leu Ser Thr Ser Ser His Gln Asp Asn Leu Trp Pro Met Ile Leu
        740   745   750

Thr Leu Leu Val Asp Tyr Thr Leu Gln Thr Ser Leu Ser Met Val Asn
      755   760   765

His Arg Leu Gln Ser Phe Phe Gly Gly Thr Val Met Gly Glu Ser Gly
      770   775   780

Met Lys Thr Val Glu Asp Val Gly Ser Pro Leu Lys Tyr Glu Phe Gln
785   790   795   800

Val Gly Pro Met Gly Glu Gly Leu Val Gly Leu Gly Thr Leu Val Leu
        805   810   815

Gly Leu Glu Trp Pro Tyr Glu Val Ser Asn Gly Lys Trp Leu Leu Tyr
        820   825   830

Pro Thr Glu Ile Thr Val His Gly Asn Gly Ser Trp Pro Cys Arg Pro
      835   840   845

Pro Gly Asp Leu Ile Asn Pro Leu Asn Leu Thr Leu Ser Asp Pro Gly
   850   855   860

Asp Arg Pro Ser Ser Pro Gln Arg Arg Arg Gln Leu Asp Pro Gly
865   870   875   880

Gly Gly Gln Gly Pro Pro Pro Val Thr Leu Ala Ala Ala Lys Lys Ala
           885   890   895

Lys Ser Glu Thr Val Leu Thr Cys Ala Thr Gly Arg Ala His Cys Val
         900   905   910

Trp Leu Glu Cys Pro Ile Pro Asp Ala Pro Val Val Thr Asn Val Thr
     915   920   925

Val Lys Ala Arg Val Trp Asn Ser Thr Phe Ile Glu Asp Tyr Arg Asp
   930   935   940

Phe Asp Arg Val Arg Val Asn Gly Trp Ala Thr Leu Phe Leu Arg Thr
945   950   955   960

Ser Ile Pro Thr Ile Asn Met Glu Asn Lys Thr Thr Trp Phe Ser Val
         965   970   975

Asp Ile Asp Ser Glu Leu Val Glu Glu Leu Pro Ala Glu Ile Glu Leu
      980   985   990

Trp Leu Val Leu Val Ala Val Gly Ala Gly Leu Leu Leu Leu Gly Leu
    995   1000   1005

Ile Ile Leu Leu Leu Trp Lys Cys Asp Phe Phe Lys Arg Thr Arg
   1010   1015   1020

Tyr Tyr Gln Ile Met Pro Lys Tyr His Ala Val Arg Ile Arg Glu
   1025   1030   1035

Glu Glu Arg Tyr Pro Pro Pro Gly Ser Thr Leu Pro Thr Lys Lys
   1040   1045   1050

His Trp Val Thr Ser Trp Gln Thr Arg Asp Gln Tyr Tyr
   1055   1060   1065